(67)

LENOX
CHINA • CRYSTAL
POMONA, NEW JERSEY 08240

4/21
Joel

CA82 - June 16, 1982

Dr. Ernest Regna
Chief, Solid Waste Branch
Air & Waste Management Division
U. S. Environmental Protection Agency, Region II
26 Federal Plaza - Room 905
New York, New York 10278

Re: Hazardous Waste Management Facility in Pomona, New Jersey
EPA Identification No. NJD002325074

Dear Dr. Regna:

This is in response to Mr. Michael Bonchonsky's April 28 letter requesting information regarding the groundwater monitoring program utilized by Lenox China Inc. at its Pomona manufacturing facility.

Exhibit 1 is a site plan of the Pomona facility showing the location of the Slip Basin (Item 7) and the Glaze Basin (Item 10). The Glaze Basin contains glaze which was discharged prior to 1970. This basin has been a dormant storage facility since that date. It is the Company's intent to remove and recycle material from this basin to reclaim lead. The Slip Basin, which received glaze from 1970 to 1981, is an integral part of the Industrial Waste Treatment System which is covered by NPDES Permit #NJ0005177. Internal process changes made in 1980 and 1981 now permit the recycling of all glaze within the plant.

The monitoring program utilized at this location incorporates two wells (Exhibit 1: Items 6 and 22), which are approximately 450 feet to the northeast of the Glaze Basin. These wells are alternated weekly. They pump 300 gallons per minute and they constitute the dominant hydraulic influence. They are sampled and tested on a regularly scheduled basis. Drilling records for these wells are included as Exhibits 2 and 3.

The Company has studied potential migration of lead from the Glaze Basin. A staff memo documenting the procedure followed and conclusions reached is included as Exhibit 4. The conclusions of this study are as follows:

> Test borings reveal that there has been almost no penetration of glaze into the substrata and there is no evidence of groundwater migration.
>
> The glaze is stable (not prone to migrate). This is due to the bentonitic (swelling clay) suspension system.
>
> Chemical tests show that H_2S (hydrogen sulifide) present in the strata immobilizes lead at the glaze/earth interface.

The natural organic mat which exists below the Glaze Basin serves as a natural barrier to any migration of lead into the groundwater. Ongoing annual data obtained since 1968 from the wells located northeast of the Glaze Basin show no evidence of lead migration.

The groundwater program discussed above and described in accompanying exhibits has been reviewed by our regulatory consultant, New Jersey First Incorporated. At the suggestion of New Jersey First, the Company has also had discussions with groundwater consultant, Geraghty & Miller, Inc. regarding specific services which that company might render in evaluating the existing groundwater monitoring program, and in making any recommendations which might be appropriate regarding additions or modifications to this program.

The Company has also discussed, through our regulatory consultants, the status of our hazardous waste facility compliance program with the State of New Jersey, Bureau of Groundwater Resources Management. Steps are being taken to demonstrate compliance with New Jersey's requirement for an Industrial Waste Facility Management permit which includes compliance with all hazardous waste facility regulations. In the context of quickly resolving any regulatory questions which might arise, we request that regulatory jurisdiction for our project be assigned to the State of New Jersey. We feel that this approach would serve the best interests of all parties and be consistent with the Phase 1 delegation of the Federal Hazardous Waste program to the State of New Jersey.

No! Not Possible under Phase

If you require further information or clarification regarding this letter, please do not hesitate to contact me.

Very truly yours,

A. J. Gustray
Director of Facilit[illegible]ing

AJG/bt

cc: Mr. John Trela
Chief, Permits Review Section
Bureau of Groundwater Resources Management
Division of Water Resources
CN 029
Trenton, New Jersey 08625

Mr. John W. Gaston P.E.
New Jersey First Incorporated
Route 31 Professional Building
2490 Pennington Road
Trenton, New Jersey 08638

Mr. John Isbister, V.P.
Geraghty & Miller Inc.
North Shore Atrium
6800 Jericho Turnpike
Syosset, New York 11791

CENTURY
Environmental Testing Labs, Inc.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park/Thorofare. N.J. 08086/609-848-3939

ANALYSIS REPORT
NO. B686

CERTIFICATE OF ANALYSIS

CLIENT

Lenox China
Pomona, N.J. 08240
ATTN: William Simmons

LOG NUMBER: B686

SAMPLE IDENTIFICATION: Well #3

SAMPLE RECEIVED 1/28/82 ANALYSIS COMPLETED

COLLECTED BY

RESULTS (mg/L unless specified)

TEST PARAMETER	B686			TEST PARAMETER	B686		
BOD_5*				Chlorine Demand			
COD				Chlorine Residual			
TOC #1	< 1			Chloride (CL)	4.9		
TOC #2	< 1			Hardness (Non-Carb.)	15		
TOC #3	< 1			Hardness (Carbonate)	< 10		
TOC #4	< 1			Hardness (as $CaCO_3$)	15		
Dissolved Solids				Hardness/Calcium (as $CaCO_3$)	16		
Sett. Solids (ml/L)							
pH	5.6			TOTAL ORG. HALIDE (1)	44PPB		
Phenols	< .01			" " " (2)	55PPB		
Cyanide (Total)				" " " (3)	57PPB		
Fluoride	< .1			" " " (4)	70PPB		
Cyanide (Free)				Barium			
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium			
Carbon Dioxide	27			Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)			
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper			
Nitrite (N)				Iron	0.13		
Nitrate (N)	< 1			Lead	< 0.05		
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese	< 0.01		
Sulfate (SO_4)	13.2			Mercury			
Sulfite (SO_3)				Nickel			
Sulfide				Potassium			
Color				Selenium			
Turbidity (NTU)	0.9			Silver			
Conductivity (Micromohs)	57			Sodium	5.6		
Alk (Total) as $CaCO_3$	< 10			Tin			
				Titanium			
Fecal Coliform				Zinc			
Total Coliform							

* A minimum of 5 sample dilutions were used for this determination.
** Non-detectable, below the limit of detection.

LAB COMMENT:

Richard W Lynch
LAB DIRECTOR

LAB CERTIFICATION NO: 08153
N.J. DEPARTMENT OF HEALTH

CENTURY
Environmental Testing Labs, Inc.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park/Thorofare. N.J. 08086/609-848-3939

ANALYSIS REPORT
NO. B685

CERTIFICATE OF ANALYSIS

CLIENT

Lenox China
Pomona, New Jersey 08240
ATTN: William Simmons

LOG NUMBER	SAMPLE IDENTIFICATION
B685	Well #2

SAMPLE RECEIVED 1/28/82 ANALYSIS COMPLETED

COLLECTED BY

RESULTS (mg/L unless specified)

TEST PARAMETER	B685			TEST PARAMETER	B685		
BOD_5*				Calcium Hardness (As $CaCO_3$)	16		
COD				Chlorine Residual			
TOC #1	< 1			Chloride (CL)	5.7		
TOC #2	< 1			Hardness (NON-Carb)	25		
TOC #3	< 1			Hardness (carbonate)	<10		
TOC #4	< 1			Hardness (as $CaCO_3$)	25		
Dissolved Solids				TOTAL ORG. HALIDE (1)	75PPB		
Sett. Solids (ml/L)				" " " (2)	47PPB		
pH	5.1			" " " (3)	56PPB		
Phenols	<.01			" " " (4)	72PPB		
Cyanide (Total)							
Fluoride	<.1			Arsenic			
Cyanide (Free)				Barium	< 0.1		
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium			
CO_2	23			Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)			
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper			
Nitrite (N)				Iron	0.23		
Nitrate (N)	< 1			Lead	< 0.05		
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese	.03		
Sulfate (SO_4)	15.6			Mercury			
Sulfite (SO_3)				Nickel			
Sulfide				Potassium			
Color				Selenium			
Turbidity (NTU)	1.2			Silver			
Conductivity (Micromohs)	60			Sodium	5.0		
Alk (Total) as $CaCO_3$	< 10			Tin			
				Titanium			
Fecal Coliform				Zinc			
Total Coliform							

* A minimum of 5 sample dilutions were used for this determination.
** Non-detectable, below the limit of detection.

LAB COMMENT:

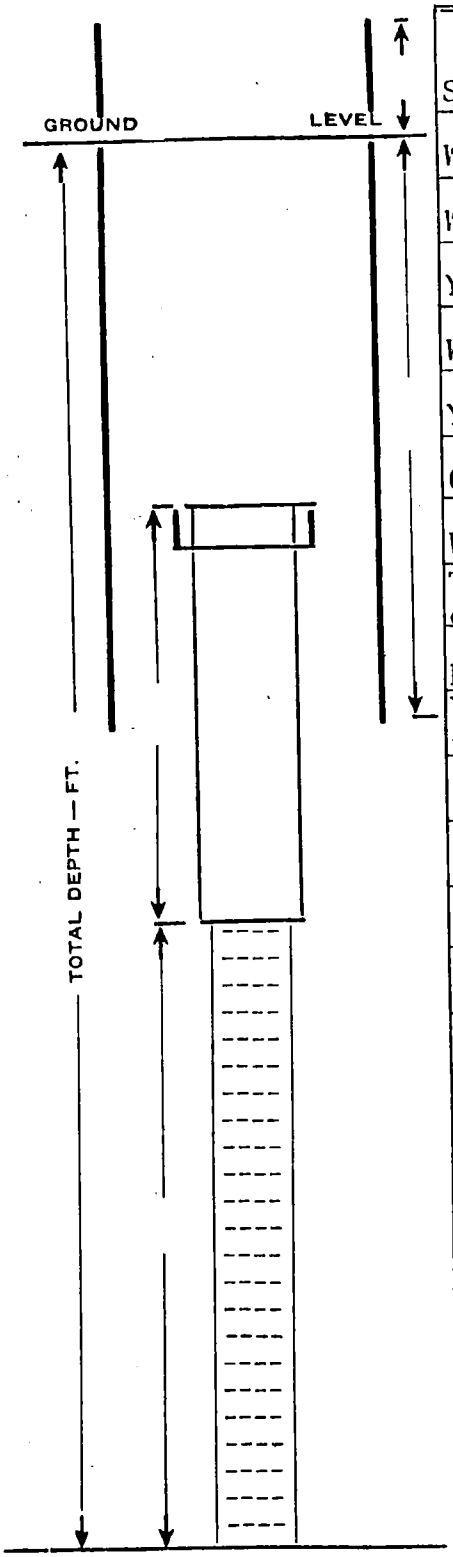
Richard W. Lynch
LAB DIRECTOR

LAB CERTIFICATION NO: 08153
N.J. DEPARTMENT OF HEALTH

EXHIBIT 3

A.C. SCHULTES & SONS, INC.

GRAVEL PACKED WELL



WELL LOG	FEET FROM GROUND SURFACE
Sandish Clay & Stone	0 TO 6
White Clay	6- 13
White Gravel	13- 45
Yellow Clay	45- 50
White Sand	50- 69
Yellow Clay	69- 72
Gravel-White Clay	72- 74
White Clay	74- 78
Tan Sand & Streaks of Yellow Clay	78- 88
Medium Tan Sand	88-101
Yellow & Dark Brown Clay	101-103
Brown Clay-Lignite	103-107
Fine to Med.Tan Sand	107-150
Medium Gray Sand	150-164
Gray Clay	164-185

NAME OF OWNER	
LENOX CHINA, INC.	
Location	TILTON RD., POMONA
Well No.	3
Job No.	1131
Test Pumped (Hrs.)	8
Capacity G.P.M.	411
Static Level (Rotary Table)	14'-0"
Pumping Level (Rotary Table)	33'-10½"
Specific Capacity	20.72
Diameter of Outer Casing	12"
Diameter of Inner Casing	8"
Depth of Well (Rotary Table)	168'-0"
Depth to R.L. Nipple (Rotary Table)	
Gravel Ground Size	80'-0" NO. 2
Length of Outer Casing	120'-1"
Length of Inner Casing and Screen	168'-0"
Underream Size	30"
Screen Material	S. S.
Screen Mfg.	JOHNSON
Size of Screen (Dia.)	☐ Telescope ☒ Pipe Size 8"
Length of Screen	40'-0"
Top Screen Fitting	WELDED RING
Bottom Screen Fitting	WELDED RING
Slot Size	.045"
Bags of Cement	125
Drilling Machine	6B
Date Well Completed	08/31/76
Driller	C. SACCO

*Rotary Table approx. 3' above original ground level

FORM 100

A.C. SCHULTES & SONS, INC.

PUMPING TEST DATA

CUSTOMER LENOX CHINA, INC. JOB. NO. 1131

LOCATION OF WELL TILTON ROAD, POMONA, NEW JERSEY

WELL NO. 3 DIAMETER 12" x 8" DEPTH

STATIC WATER LEVEL 14'-0" DATUM

CAPACITY MEASURED BY ORIFICE

DATE TEST STARTED SEPTEMBER 3, 1976 DURATION OF TEST EIGHT HOURS

TIME	CAPACITY	DISCHARGE PRESSURE	PUMPING LEVEL	DRAW DOWN	SPECIFIC CAPACITY GAL/FT.	WATER LEVELS & REMARKS
7:45	411		29'-9"	15'-9"		
8:00	411		30'-2½"	16'-2½"		
8:15	411		30'-4"	16'-4"		
8:30	411		30'-9"	16'-9"		
8:45	411		31'-2½"	17'-2½"		
9:00	411		31'-7"	17'-7"		
9:15	411		32'-3"	18'-3"		
9:30	411		32'-9"	18'-9"		
9:45	411		33'-3"	19'-3"		
10:00	411		33'-5"	19'-5"		
10:15	411		33'-6"	19'-6"		
10:30	411		33'-6½"	19'-6½"		
10:45	411		33'-9"	19'-9"		
11:00	411		33'-6½"	19'-6½"		
11:15	411		32'-11"	18'-11"		
11:30	411		33'-4"	19'-4"		
11:45	411		33'-0"	19'-0"		
12:00	411		33'-6"	19'-6"		
12:15	411		33'-2½"	19'-2½"		
12:30	411		33'-0"	19'-0"		
12:45	411		33'-2"	19'-2"		

NOTE #2 WELL RUNNING DURING TEST

A.C. SCHULTES & SONS, INC.

PUMPING TEST DATA

JOB. NO. 1131

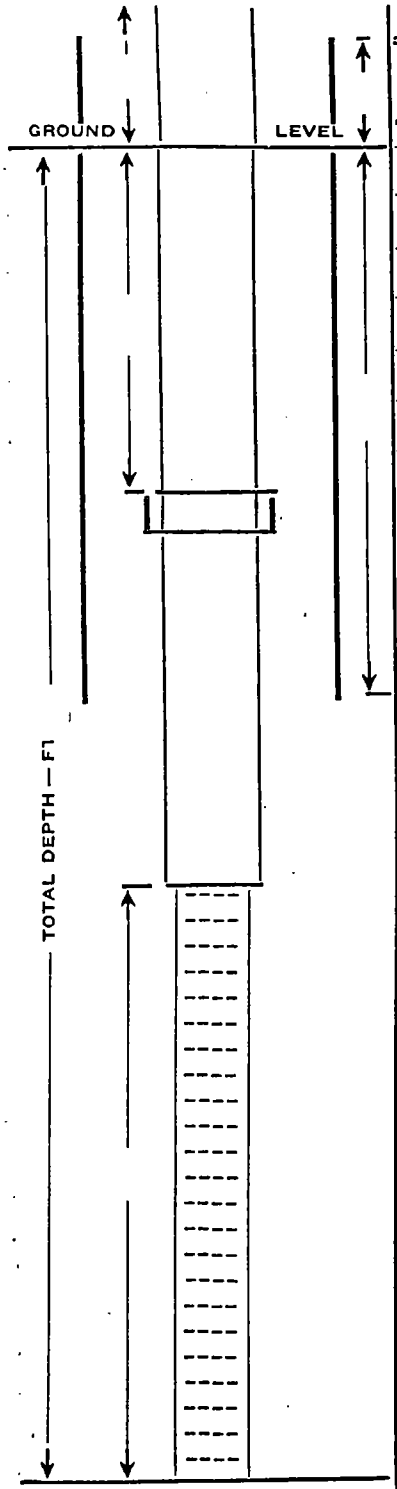
TIME	CAPACITY	DISCHARGE PRESSURE	PUMPING LEVEL	DRAW DOWN	SPECIFIC CAPACITY GAL/FT.	WATER LEVELS & REMARKS		
1:00	411		33'-7"	19'-7"				
1:15	411		33'-7"	19'-7"				
1:30	411		33'-10"	19'-10"				
1:45	411		33'-3"	19'-3"				
2:00	411		33'-9"	19'-3"				
2:15	411		33'-5½"	19'-5½"				
2:30	411		32'-11½"	18'-11½"				
2:45	411		32'-8½"	18'-8½"				
3:00	411		33'-9½"	19'-9½"				
3:15	411		33'-7"	19'-7"				
3:30	411		33'-8"	19'-8"				
3:45	411		33'-10½"	19'-10½"	20.72			

EXHIBIT 2

A. C. SCHULTES & SONS

Water Well Contractors

Gravel Packed Well



Lenox China

WELL LOG	FEET FROM GROUND SURFACE
Top Soil	0 TO 2
Sandish Clay	2-6'
Sand, Gravel, & Stones	6-14'
White Sandish Clay	14-19'
Sand, Gravel & Stones	19-44'
Clay Mixed with Sand & Stones	44-69'
Clay-Yellow	69-112'
Green, Gray Sandish Clay	112-129'
Sand, Medium-Fine, Some Gravel	129-164'
Sand Course & Gravel & Lignite	164-180'
Clay, Gray Sandy	180-207'

NAME OF OWNER: Lenox China

Well No. 2

Job No. 7273

Location Egg Harbor

Test Pumped (Hrs.) 8

Capacity G.P.M. 310

Static Level (Ground) 8'

Pumping Level (Ground) 43'

Specific Capacity 9

Diameter of Outer Casing 12"

Diameter of Inner Casing 8"

Dept of Well (Ground) 173'-8"

Dept to R. L. Nipple (Ground) --

Depth to Gravel (Ground) 52'

Gravel Size #2

12" = Length of Casing 132'-5"

8" = Length of Casing 138'-10"

Underream Size 24"

Type of Screen Johnson SS.

Size of Screen (Dia.) 8" 1D

Top Screen Fitting Thread

Bottom Screen Fitting Thread

Slot Size #30

Blank 5' Celler

Bags of Cement 135

Drilling Machine 1250 Diesel

Date Well Completed 4/28/67

Driller Neider

A.C. SCHULTES & SONS, INC.

PUMPING TEST DATA

CUSTOMER Lenox China JOB. NO. 7273

LOCATION OF WELL Pomona, New Jersey

WELL NO. 2 DIAMETER 12"x8" DEPTH 173'-8" Ground

STATIC WATER LEVEL 10' -2" DATUM Top of Casing

CAPACITY MEASURED BY Orffice

DATE TEST STARTED 4/28/67 DURATION OF TEST 8 hrs.

TIME	CAPACITY	DISCHARGE PRESSURE	PUMPING LEVEL	DRAW DOWN	SPECIFIC CAPACITY GAL/FT.	WATER LEVELS & REMARKS		
8:00	314		42'-½"	31'-10½"	10.12			
8:02	314		43'-00"	32'-10"	9181			
8:04	314		43'-1"	32'-11"	9.81			
8:06	314		43'-2"	33'-0"	9.5			
8:08	314		43'-4"	33'-2"	9,5			
8:10	314		43'-6"	33'-4"	9.4			
8:12	314		43'-8¼"	33'-6¼"	9.3			
8:14	314		43'-8 3/4"	33'-6 3/4"	9.3			
8:16	314		43'-8 3/4"	33'-6 3/4"	9.3			
8:18	314		43'-8 3/4"	33'-6 3/4"	9.3			
8:20	314		43'-10½"	33'-8½"	9.3			
8:22	314		43'-10 3/8"	33'-8 3/8"	9.3			
8:24	314		43'-10½"	33'-8½"	9.2			
8:26	314		43'-11"	33'-9"	9.2			
8:28	314		44'-1"	33'-11"	9.2			
8:30	314		44'-1½"	33'-11½"	9.2			
8:35	314		44'-3½"	34'-1½"	9.2			
8:40	314		44'-5¼"	34'-3¼"	9.1			
8:45	310		44'-5 3/4"	34'-3 3/4"	9.11			
8:50	310		44'-7"	34'-5"	9.11			
8:55	310		44'-7½"	34'-5½"	9.11			
9:00	310		44'-7 3/4"	34'-5 3/4"	9.11			

Lenox Inc.
We[illegible] #2
Shee. #2

A.C. SCHULLS & SONS, INC.

PUMPING TEST DATA

JOB. NO. 7273

TIME	CAPACITY	DISCHARGE PRESSURE	PUMPING LEVEL	DRAW DOWN	SPECIFIC CAPACITY GAL/FT.	WATER LEVELS & REMARKS		
9:15	310		44'-8 3/4"	34'-6 3/4"	9.1			
9:30	310		45'-0"	34'-10"	9.0			
9:45	310		45'-0"	34'-10"	9.0			
10:00	310		45'-1 1/8"	34'-11 1/8"	8.7			
10:15	307		45'-1"	34'-11"	8.7			
10:30	307		45'-2 1/2"	35'-1/2"	8.07			
10:45	307		45'-1/2"	34'-10 1/8"	9.02			
11:00	307		45'-1/2"	34'-10 1/8"	9.02			
11:15	307		45'-3"	35'-1"	8.7			
11:30	307		45'-10"	34'-8"	8.6			
11:45	307		45'8"	35'-6"	8.6			
12:00	307		45'-7 1/2"	35'-5 1/2"	8.6			
12:15	307		45'-9 3/4"	35'-7 3/4"	8.6			
12:30	307		45'-7"	35'-5"	8.7			
12:45	307		45'-6"	35'-4"	8.7			
1:00	307		45'-7 1/4"	35'-5 1/4"	8.6			
1:15	307		45'-11 1/8"	35'-9 1/8"	8.6			
1:30	307		45'-8"	35'-6"	8.6			
1:45	307		45'-7 1/8"	35'-5 1/8"	8.6			
2:00	307		45'-11 1/8"	35'-9 1/8"	8.6			
2:15	307		45'-9 1/8"	35'-7 1/8"	8.6			
2:30	305		46'-1 1/8"	35'-11 1/8"	8.7			
2:45	307		45'-9 3/4"	35'-7 3/4"	8.6			
3:00	307		45'-9 1/8"	35'-7 1/8"	8.6			
3:15	307		45'-11 1/8"	35'-9 1/8"	8.6			
3:30	307		45'-9 3/4"	35'-7 3/4"	8.6			
3:45	307		46'-0"	35'-10"	8.6			
4:00	307		45'-9 1/2"	35'-7"	8.6			

CENTURY
Environmental Testing Labs, Inc.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park/Thorofare, N.J. 08086/609-848-3939

ANALYSIS REPORT
NO. A5552

CERTIFICATE OF ANALYSIS

CLIENT

A.C.Schultes
664 S. Evergreen Avenue
Woodbury, N.J. 08096

LOG NUMBER: A5552

SAMPLE IDENTIFICATION: Lenox China Well #2 (11:00)
Job #8388

SAMPLE RECEIVED 7/23/81 ANALYSIS COMPLETED 7/31/81

COLLECTED BY

RESULTS (mg/L unless specified)

TEST PARAMETER	A5552			TEST PARAMETER	A5552		
BOD_5*				Chlorine Demand			
COD				Chlorine Residual			
TOC				Chloride (CL)	21.0		
Dissolved Oxygen				Silica			
Suspended Solids				Petroleum HYC.			
Total Solids				Hardness (as $CaCO_3$)			
Dissolved Solids							
Sett. Solids (ml/L)							
pH	4.43						
Phenols				Aluminum			
Cyanide (Total)				Antimony			
Fluoride				Arsenic	<.002		
Cyanide (Free)				Barium	.3		
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium	<.01		
				Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)	<.01		
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper			
Nitrite (N)				Iron			
Nitrate (N)	0.7			Lead	<.05		
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese			
Sulfate (SO_4)				Mercury	<0005		
Sulfite (SO_3)				Nickel			
Sulfide				Potassium			
Color				Selenium	<.002		
Turbidity (NTU)				Silver	<.01		
Conductivity (Micromohs)				Sodium			
Alk (Total) as $CaCO_3$				Tin			
				Titanium			
Fecal Coliform				Zinc			
Total Coliform							

* A minimum of 5 sample dilutions were used for this determination.
• Non-detectable, below the limit of detection.

LAB COMMENT:

Richard W. Lynch

CENTURY
Environmental Testing Labs, Inc.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park/Thorofare, N.J. 08086/609-848-3939

ANALYSIS REPORT
NO. A5553

CERTIFICATE OF ANALYSIS

CLIENT

A.C.Schultes
664 S. Evergreen Avenue
Woodbury, N.J. 08096

LOG NUMBER	SAMPLE IDENTIFICATION
A5553	Lenox China, Well #3, (13:00)
	Job # 8388

SAMPLE RECEIVED 7/23/81 ANALYSIS COMPLETED 7/31/81

COLLECTED BY

RESULTS (mg/L unless specified)

TEST PARAMETER	A5553			TEST PARAMETER	A5553		
BOD_5*				Chlorine Demand			
COD				Chlorine Residual			
TOC				Chloride (CL)	26.5		
Dissolved Oxygen				Silica			
Suspended Solids				Petroleum HYC.			
Total Solids				Hardness (as $CaCO_3$)			
Dissolved Solids							
Sett. Solids (ml/L)							
pH	4.53						
Phenols				Aluminum			
Cyanide (Total)				Antimony			
Fluoride				Arsenic	<.002		
Cyanide (Free)				Barium	.1		
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium	<.01		
				Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)	<.01		
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper			
Nitrite (N)				Iron			
Nitrate (N)	0.7			Lead	<.05		
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese			
Sulfate (SO_4)				Mercury	<.0005		
Sulfite (SO_3)				Nickel			
Sulfide				Potassium			
Color				Selenium	<.002		
Turbidity (NTU)				Silver	<.01		
Conductivity (Micromohs)				Sodium			
Alk (Total) as $CaCO_3$				Tin			
				Titanium			
Fecal Coliform				Zinc			
Total Coliform							

* A minimum of 5 sample dilutions were used for this determination.
** Non-detectable, below the limit of detection.

LAB COMMENT:

Richard W. Lyons

LAB CERTIFICATION NO. 08152

EXHIBIT 4

LENOX OFFICE MEMO DATE: Dec. 9, 1980

TO: File

FROM: J. T. Jones

SUBJECT: Preliminary Chemical Survey of Glaze Basin

I. Historical Notes

1954 - A 60' x 90' x 6' deep excavation was made adjacent to and directly east northeast of the presently existing quonset hut (See sketch). The excavation was called the glaze basin. Glaze from glaze preparation and application operations was deposited into the Glaze Basin.

1970 (approx)- Deposition of glaze to the glaze basin was terminated. A program to stop glaze waste by a variety of methods was instituted. Wash water from glaze preparation and application operations was deposited in the Slip Basin.

1980 (24 Oct.) 17,000 lbs. shipped to Metallurgical Resources, Phila., Pa. for recycling.

1980 (22 Nov.) 40,000 lbs. shipped as above. Glaze was stacked by crane to the "east half" of the basin. A sump was placed in the west half of the basin.

1980 (24 Nov.) Samples were taken at point "A", "B", and "C" (see attached).

1980 (25 Nov.) A dirt barrier plus polyethylene sheeting was run across basin center to trap rain water draining from piled glaze and prevent penetration of such water to the substrata.

1980 (1 Dec.) Samples were taken at point "D" and "E" (see attached).

II. Purpose of Preliminary Survey

The operation on 24 Nov. exposed the walls and floor of the "west half" of the basin making it possible to take borings and subsequent samples. The purpose of the survey was to determine the extent of penetration of glaze material into adjacent strata.

III. Results of the Preliminary Survey

A. Observations During Excavation (22 Nov. 1980)

The excavation on Saturday 22 Nov. 1980 exposed the glaze/substrata interface. It was characterized by:

1. Sharp delineation between the glaze and the substrata. The immediate substrata was black!

FORM 162A

III. Results of the Preliminary Survey

A. Observations During Excavation (22 Nov. 1980) (cont'd)

2. The distinctive smell of H_2S (g) eminating from the excavated side of the basin. (The black material was taken to the laboratory and heated - H_2S evolved).

3. Ground water was not present. The basin was found to be approximately six (6) ft. deep. This was the assumed depth for our initial volume predictions. The volume is approximately 60' x 90' x 6' or 20 yds. x 30 yds. x 2 yds. or 1200 cu. yds.

B. Chemical Observations

On November the 24th Dr. Green identified the black material as PbS (lead sulfide). This observation agreed with statements read by the writer on 23 Nov. 1980 in the Encyclopedia Brittanica i.e. that anerobic bogs generate H_2S and alter the cycle of many metallic elements by precipitating them as sulfides, e.g.

$$Pb^{+2} + H_2S_{(g)} \text{ --- } \underline{PbS} + 2\ H^{+}$$

Harry Linns of USGS (United States Geological Survey) examined the open basin on 28 Nov. 1980 with John Kinkela. He said that the formation was typical of inland versus oceanic bogs --- most likely an ancient pine bog or marshy area. He also agreed that it was anerobic and generating H_2S gas.

Borings were taken according to the attached sketch. Points A and B were taken along the edge of the basin. It was extremely hard to take representative samples at these points because of the boring conditions. Glaze contamination from above was very likely. Samples taken in the bottom of the basin, (C,D,E) were easier to keep clear of glaze because of digging conditions. However, it was impossible not to have some material fall from above. Sample E at the 2 ft. level was hard to take without some contamination although every effort was made to do so.

Chemical data for all samples are listed in Table I. It can be seen that there has been very little penetration of glaze into the substrata and that what is there is not leachable (EPA extraction).

IV. Discussion of Results

The data backs the premise that H_2S is present and that it immobilizes heavy metals. Also, the glaze itself is very stable, due to the bentonitic (swelling clay) suspension system. This prevents any mass migration.

V. Conclusion

Excavation of the Glaze Basin permitted a preliminary evaluation of the basin's impact or lack of impact on the environment.

Test borings reveal that there has been almost no penetration of glaze into the substrata and there is no evidence of ground water migration.

Chemical tests show that H_2S present in the strata immobilizes lead at the glaze earth interface.

John T. Jones

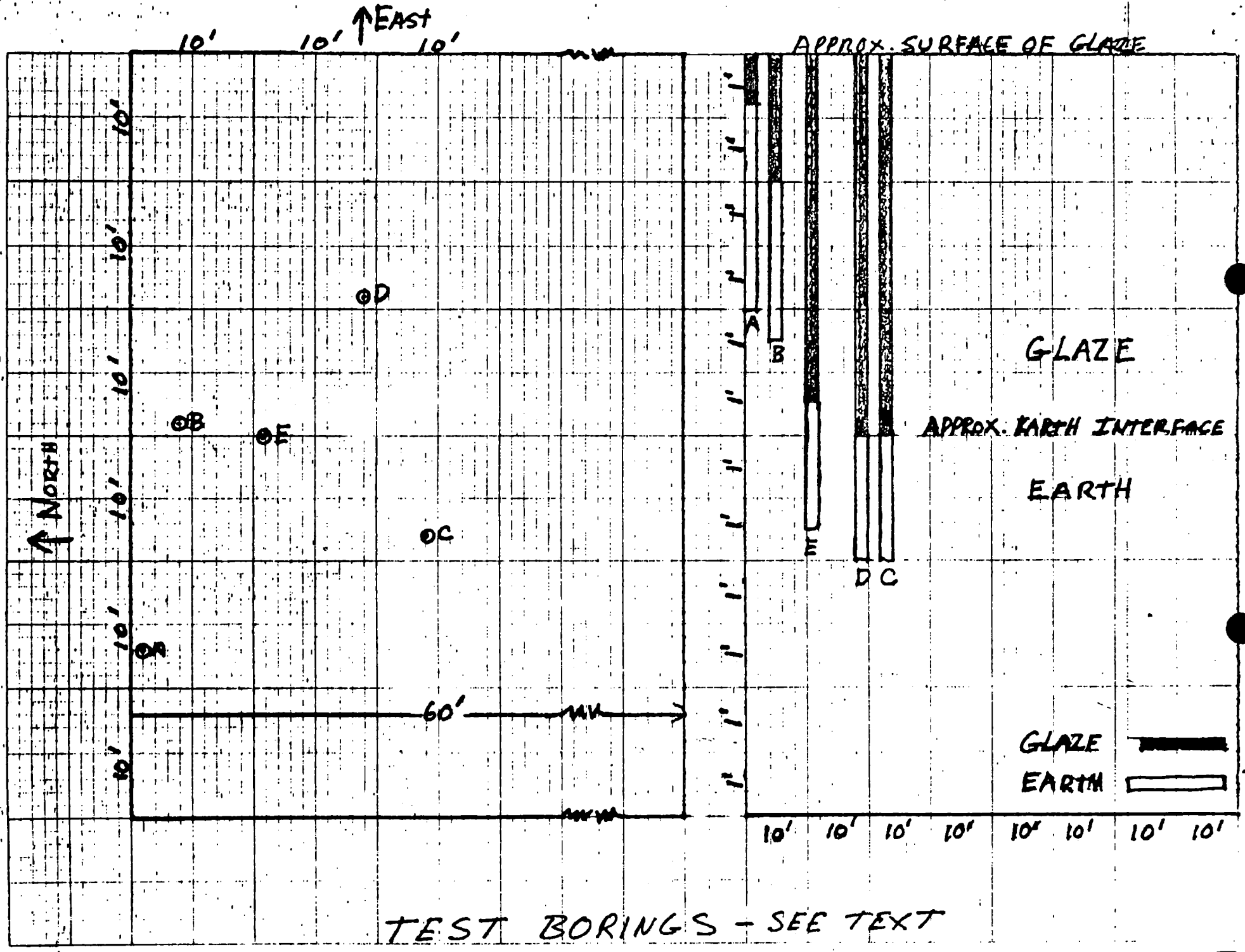
JTJ:fms

cc: R. L. Green
W. R. Miller
J. G. FitzPatrick
A. J. Gustray
J. A. Skladanek
J. F. Kinkela

Point	Depth (ft)**	(PB)Sol (HAc)	Total (Pb)%	EPA Extraction (Pb)
A	1 ft. From Surface	20 ppm	0.043	Further tests were not run on these samples because of difficulty in taking them without contamination from above glaze layer.
	2	18	0.016	
	3	25	0.027	
	4	10	0.029	
B	1 inch From Glaze	570	0.95	
	2.5 ft. From Surface	46	--	"
	3	21	0.065	
	4	2	0.0046	
	4.5	20	0.061	
C	2 inch From Interface	1.7	0.04	
	8 inch	1.22	0.0014	
	1.5 ft.	1.34	0.00315	
	2	1.18	0.00125	0.1 ppm
D	2 inch From Interface	1.2	0.001	
	0.5 ft.	0.2	0.00085	
	1	0.1	0.00055	
	1.5	0.1	0.00055	
	2.0	0.1	0.0003	0 ppm
E	2 inch From Interface	0.3	0.015	
	8 inch	0.4	0.0005	
	1 ft.	NIL	0.00025	
	1.5	0.2	0.00025	
	2	0.1	0.0006*	0 ppm

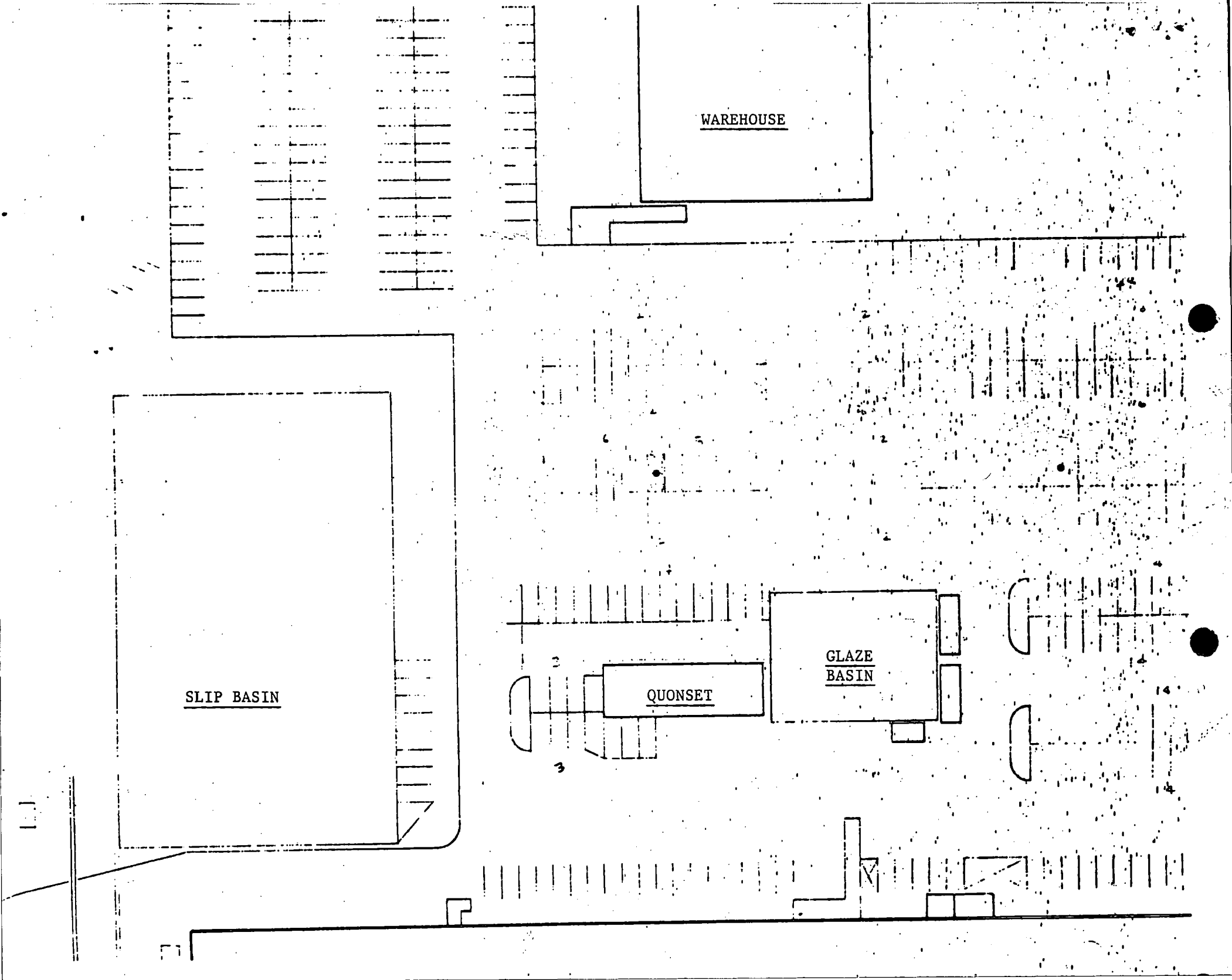
Notes:
1. The glaze is 8" thick at point "A". Therefore the 1 ft. reading is only 4" from the glaze/earth interface.
2. The glaze is 2 ft. thick at point "B". Therefore the 2.5 ft. reading is only 6" from the glaze/earth interface.
3. It was very difficult to take representative samples at points "A" and "B" because of the proximity of the glaze to the test borings.
4. The "1 inch From Glaze" sample at Point "B" was taken just below the glaze interface because "white" material was observed.

*There could have been slight contamination during testing at this depth from surface materi



TEST BORINGS - SEE TEXT

STS


WAREHOUSE
SLIP BASIN
QUONSET
GLAZE
BASIN

8/5

GD

LENOX

CHINA • CRYSTAL

POMONA, NEW JERSEY 08240

CA8 2 — July 30, 1982

Dr. Ernest Regna
Chief, Solid Waste Branch
Air & Waste Management Division
U.S. Environmental Protection Agency, Region II
26 Federal Plaza - Room 905
New York, New York 10278

Re: Hazardous Waste Management Facility in Pomona, New Jersey
EPA Identification No. NJD002325074

Dear Dr. Regna:

In response to the requirements of 265.94 of the RCRA regulations we are submitting groundwater quality data from the Lenox monitoring wells. A description and the location of these wells appears in my June 16, 1982 letter and associated exhibits. The period covered by the data is 1981 - 1982.

R09

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The company has initiated activity to modify its groundwater program to fully comply with Federal and State requirements. In subsequent correspondence, we will describe our program and indicate a specific schedule for implementation. It is currently our goal to have a modified groundwater program in place by November 1, 1982.

Very truly yours,

A. J. Gustray
Director,
Facilities Engineering

AJG/pm

cc: Mr. John Trela
Chief, Permits Review Section
Bureau of Groundwater Resources Management
Division of Water Resources
CN-029
Trenton, NJ 08625

Mr. John W. Gaston, P.E.
New Jersey First Incorporated
Route 31 Professional Building
2490 Pennington Road
Trenton, NJ 08638

Mr. John Isbister, V.P.
Geraghty & Miller, Inc.
North Shore Atrium
6800 Jericho Turnpike
Syosset, NY 11791

1UY5 002 325 074

9/21

60

Geraghty & Miller, Inc.

North Shore Atrium
6800 Jericho Turnpike
Syosset, New York 11791
Cable: WATER

CONSULTING GROUND-WATER GEOLOGISTS AND HYDROLOGISTS

Telephone: 516/921-6060

(H8)- September 16, 1982

Dimior/Regna

CERTIFIED MAIL - RETURN RECEIPT

Jacqueline E. Schafer, Regional Administrator
USEPA, Region II
26 Federal Plaza
New York, NY 10278

Dear Ms. Schafer:

Geraghty & Miller, Inc. hereby requests USEPA approval to delete certain constituents specified in 40 CFR 265.92 from a RCRA Subpart F ground-water monitoring program at the Lenox Inc. site in Pomona, New Jersey.

Pleased be advised that Lenox Inc. has implemented a RCRA Subpart F ground-water monitoring program and now seeks USEPA approval to delete the following constituents which have not been used in any manufacturing or waste treatment process at the site and/or which do not characterize the RCRA waste mix (reference attached correspondence):

Endrin	Radium
Lindane	Gross Alpha
Methoxychlor	Gross Beta
Toxaphene	Turbidity
2,4-D	Coliform Bacteria
2,4,5-TP Silvex	

We are requesting the government's approval of this modified RCRA Subpart F ground-water monitoring program to reduce the current economic burden on our client caused by incurring laboratory costs that are without any reasonable compliance related purpose, and in anticipation of USEPA final 40 CFR 264.93 regulations (FR Vol 47, No. 143, July 26, 1982).

Thank you for your consideration. We look forward to your approval.

Sincerely,

GERAGHTY & MILLER, INC.

John Isbister

John Isbister
Vice President

JI/mc

cc: A. Gustray (Lenox)
J. Trela (NJDEP)
J. Gaston (NJ First Inc.)

CORRESPONDENCE CONTROL REGION II
SEP 20 11 47 AM '82
ENVIRONMENTAL PROTECTION AGENCY NEW YORK, N.Y.

CORRESPONDENCE CONTROL REGION II
SEP 20 11 46 AM '82
ENVIRONMENTAL PROTECTION AGENCY NEW YORK, N.Y.

Geraghty & Miller, Inc.
CONSULTING GROUND-WATER GEOLOGISTS AND HYDROLOGISTS

North Shore Atrium
6800 Jericho Turnpike
Syosset, New York 11791
Cable: WATER
Telephone: 516/921-6060

9/23

6D

September 16, 1982

Simon/Regan/ACTION
due date 10/7
BCC-AWM
Logged

CERTIFIED MAIL - RETURN RECEIPT

Jacqueline E. Schafer, Regional Administrator
USEPA, Region II
26 Federal Plaza
New York, NY 10278

Dear Ms. Schafer:

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Thank you for your consideration. We look forward to your approval.

Sincerely,

GERAGHTY & MILLER, INC.

John Isbister
Vice President

JI/mc

cc: A. Gustray (Lenox)
J. Trela (NJDEP)
J. Gaston (NJ First Inc.)

Bob G, I am not sure what flexibility we have in deleting any parameters. Contact Gene Dixon of HQ (Gw Monitoring) 382-4683 Joel

CORRESPONDENCE CONTROL REGION II
SEP 22 11 05 AM '82
ENVIRONMENTAL PROTECTION AGENCY NEW YORK, N.Y.

logged

LENOX

OFFICE MEMO

TO A. J. Gustray

FROM J. T. Jones

SUBJECT Test Well Monitoring

DATE August 24, 1982

COPIES: R. L. Green, W. R. Miller, J. G. FitzPatrick

After reviewing 265.92 (b) Section (1) with Dr. Green and with plant management personnel, I suggest the following:

Parameter	Level (mg/l)	Test ?	Reason
Arsenic	0.05	No	Not present.
Barium	1.00	Yes	Used at low concentration to control sulfate in ceramic bodies.
Cadmium	0.01	Yes	Laboratory test for presence in over glaze colors.
Chromium	0.05	Yes	Used in very small amounts in silk screen processing.
Fluoride	1.4-2.4	Yes	Both HF and NaF used in acid etch/gold reclaiming operations.
Lead	0.05	Yes	Used in glaze and colors.
Mercury	0.002	No	Used in gold solutions but no access to water supply.
Nitrate (as N)	10	Yes	HNO_3 used in chemical analysis.
Selenium	0.01	Yes	Used in some colors.
Silver	0.05	No	Not used.
Endrin	0.0002	No	Not used.
Lindane	0.004	No	Ditto
Methoxychlor	0.1	No	Ditto
Toxaphene	0.005	No	Ditto

Parameter	Level (mg/l)	Test ?	Reason
2, 4-D	0.1	No	This could be run if sources external to property are suspect.
2, 4, 5-TP Silver	0.01	No	Not used.
Radium	5p Cl/l	No	Not present.
Gross Alpha	15p Cl/l	No	No Alpha source.
Gross Beta	4 millirem/yr	No	No Beta source.
Turbidity	1/TU	No	Applicable only to surface water supplies.
Coliform Bacteria	1/100 ml	?	

I would suggest that the following be analyzed routinely:

Barium
Cadmium
Fluoride
Lead

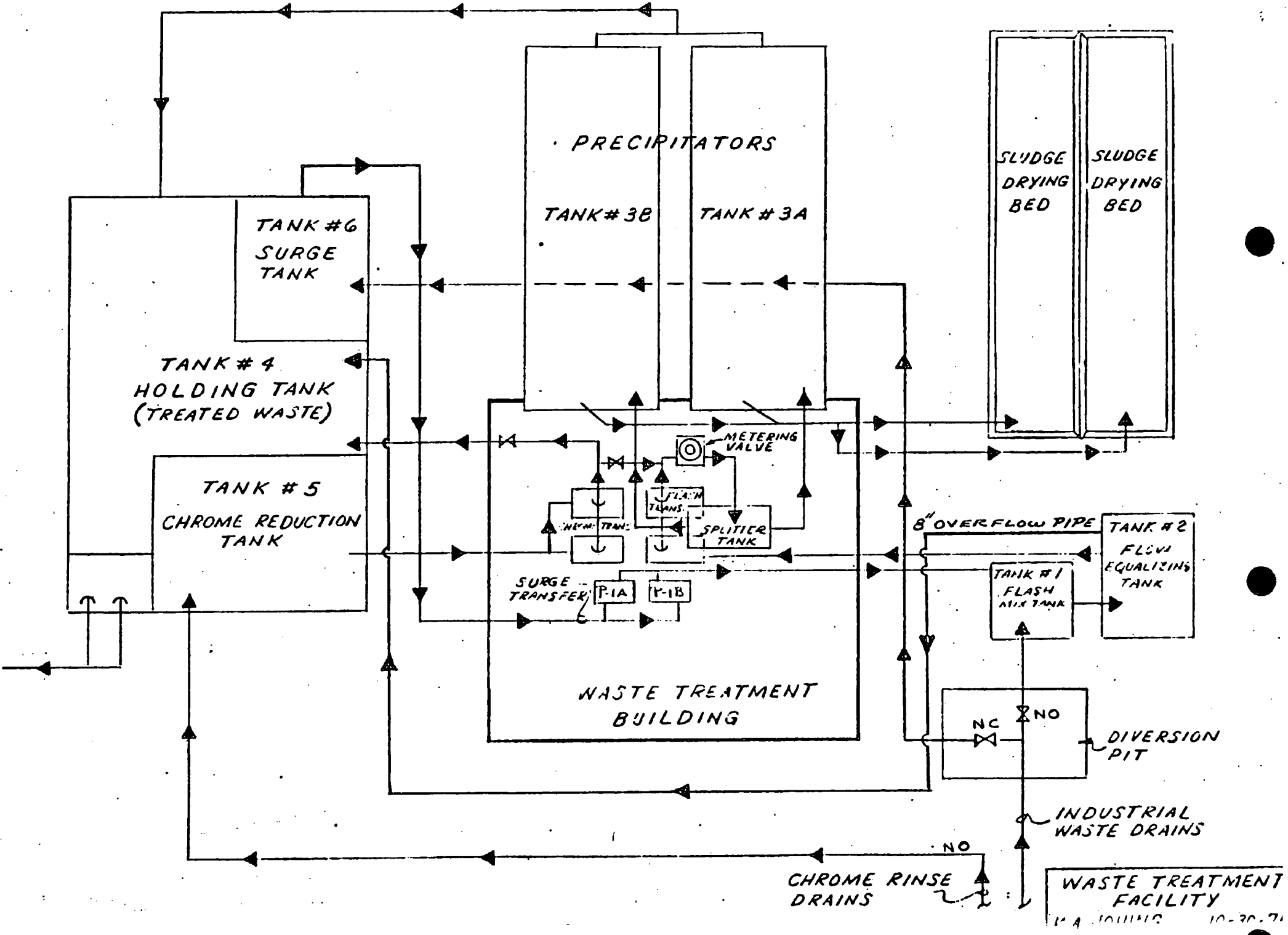
I also suggest that the following should be checked initially and then intermittently and that the test be continued only if a problem arises with a particular element.

Arsenic *
Chromium
Mercury *
Nitrate (as N)
Selenium

Let us know if we can help further.

JTJ:fms
*Only initially.

WASTE TREATMENT OPERATION



NYS 002 325 074

6D

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278

CAG 2-OCT 07 1982

Mr. John Isbister
Vice President
Geraghty & Miller, Inc.
North Shore Atrium
6800 Jericho Turnpike
Syosset, New York 11791

Dear Mr. Isbister:

The U.S. Environmental Protection Agency (EPA) has received your letter of September 16, 1982 requesting deletion of certain constituents from the groundwater monitoring requirements of 40 CFR 265.92 at the Lenox Inc. site.

EPA policy does not allow deletion of any of the groundwater monitoring parameters for the first year of monitoring (with one exception, see below). The agency believes that one year of monitoring data for the required parameters is necessary to accurately define background concentrations. It is important that such background concentrations be accurately defined, since such concentrations will be the basis for determining if companies are causing contamination.

The only deletion that can be made at this time are those corresponding to the radiological parameters. These deletions can be accomplished by sampling or obtaining analyses of public groundwater wells for the immediate surrounding area of the facility. If these data show that no radiological parameters are present, then they may be deleted from the required sampling. The reason for this exception concerning radiological parameters is the expectation that there is little likelihood of finding these parameters in groundwater owing to their very infrequent generation.

If you have any questions, please call Robert Gantzer of my staff at 212-264-1829.

Sincerely yours,

Joel Golumbek
Chief
NJ/Caribbean Hazardous Waste Section
Solid Waste Branch

NYJ 002 325 074

6D

Geraghty & Miller, Inc.

CONSULTING GROUND-WATER GEOLOGISTS AND HYDROLOGISTS

North Shore Atrium
6800 Jericho Turnpike
Syosset, New York 11791
Cable: WATER

Telephone: 516/921-6060

CA82 — November 2, 1982

Mr. Robert Gantzer
New Jersey Hazardous Waste Section
Solid Waste Branch
USEPA, Region II
26 Federal Plaza
New York, New York 10278

Dear Mr. Gantzer:

In regard to our phone conversation of November 1, 1982, and Mr. Golumbek's October 7, 1982, letter concerning the deletion of RCRA radiological parameters by our client (Lenox, Inc.) we are hereby requesting that EPA approve the sampling of supply wells on Lenox property to develop information that may be used to request the deletion of the RCRA radiological parameters. The Lenox wells are constructed in a manner similar to public supply wells and their pumping rates are comparable to public supply wells.

Thank you for your consideration. We look forward to your timely approval.

Sincerely,

GERAGHTY & MILLER, INC.

Erhardt Werth

Erhardt Werth
Senior Scientist

EW:kd

Enclosure w/o enclosure
01/08/99 - KOM

NYS002 325 074

GD

LENOX
CHINA · CRYSTAL
POMONA, NEW JERSEY 08240

CA82 - November 17, 1982

Dr. Ernest Regna
Chief, Solid Waste Branch
Air & Waste Management Division
U.S. Environmental Protection Agency
Region II
26 Federal Plaza - Room 905
New York, New York 10278

Dear Dr. Regna:

We have completed the drilling and installation of three monitoring wells, the collection of water level, lithologic and soil permeability data and the identification of local groundwater flow patterns.

Today, we made the decision to install one more downgradient well, based on the recommendation of Geraghty & Miller, Inc. our consulting groundwater geologists and hydrologists. The proposed location of this well is shown on attached G&M location plan.

This well will be installed on November 22, 1982. The completion of this well will provide a groundwater monitoring system of one upgradient well and three downgradient wells.

Collection of water samples will commence on November 24, 1982.

Very truly yours,

A. J. Gustray

A. J. Gustray
Director,
Facilities Engineering

AJG/pm
Attachment

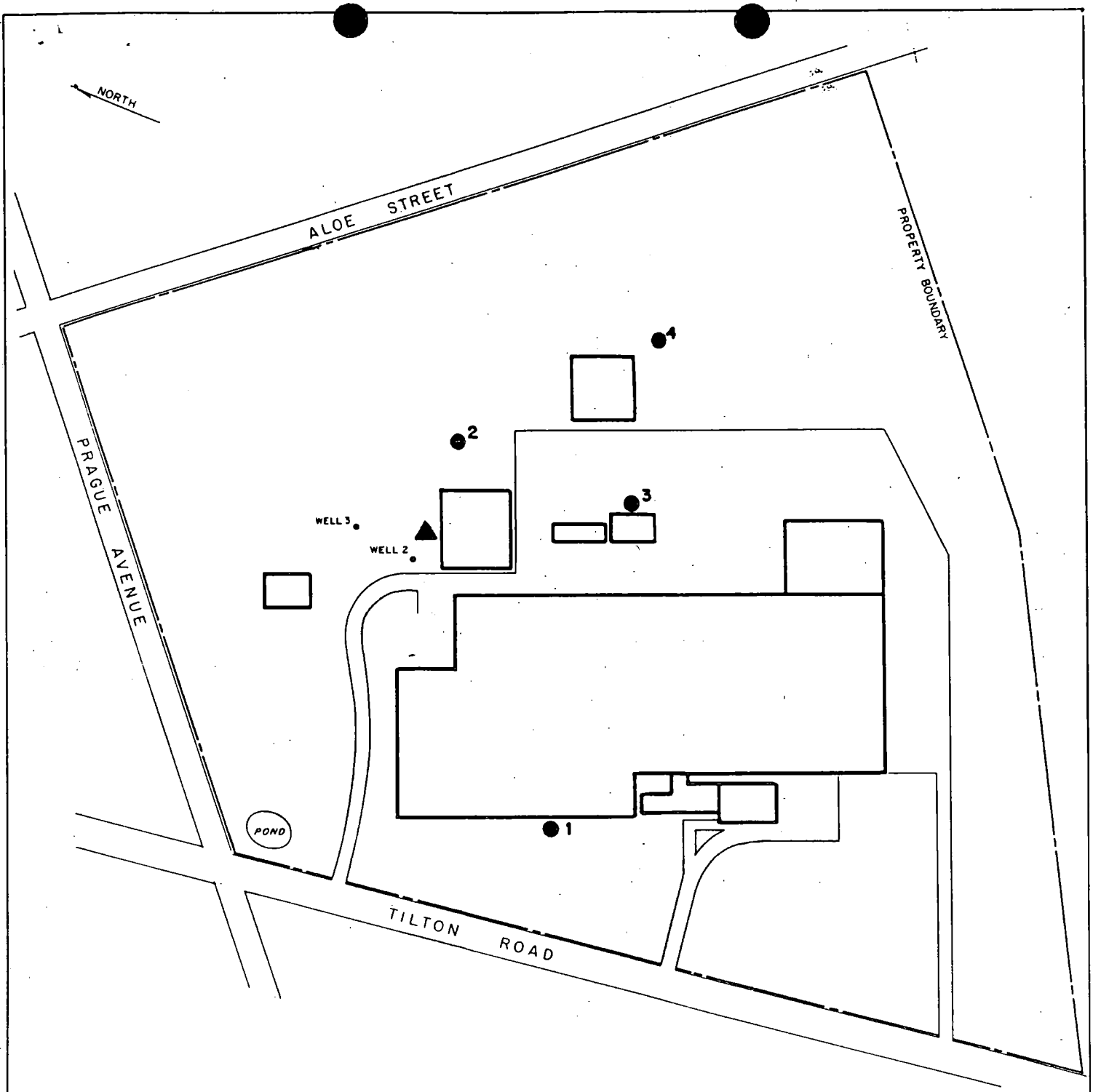
Mr. Joel Golumbek, Chief
N.J./Caribbean Hazardous Waste Section
Solid Waste Branch
U.S. Environmental Protection Agency
Region II
26 Federal Plaza
New York, NY 10278

Mr. Robert Gantzer
N.J./Caribbean Hazardous Waste Section
Solid Waste Branch
U.S. Environmental Protection Agency
Region II
26 Federal Plaza
New York, NY 10278

Mr. Richard J. Sullivan
New Jersey First, Inc.
Route 31 Professional Bldg.
2490 Pennington Road
Trenton, NJ 08638

Mr. John Isbister, V.P.
Geraghty & Miller, Inc.
N. Shore Atrium
6800 Jericho Turnpike
Syosset, NY 11791

Mr. Erhardt Werth
Senior Scientist
Geraghty & Miller, Inc.
N. Shore Atrium
6800 Jericho Turnpike
Syosset, NY 11791



EXPLANATION

- ● EXISTING MONITORING WELL
- ▲ PROPOSED MONITORING WELL

0 100 200 300 feet

LOCATIONS OF EXISTING AND PROPOSED MONITORING WELLS

PREPARED FOR

LENOX INCORPORATED
POMONA, NEW JERSEY

Geraghty & Miller, Inc.	COMPILED BY E. WERTH	SCALE SHOWN	FIGURE 8
	PREPARED BY R. PADULA		
	PROJECT MGR E. WERTH	DATE OCT. 82	

T. Talcott (61)

CA83 - JAN 7 1983

Mr. Erhart Werth
Geraghty & Miller, Inc.
North Shore Atrium
6800 Jericho Turnpike
Syosset, New York 11791

NJD002325074

Dear Mr. Werth:

fdl

The Environmental Protection Agency Region II is in receipt of your letter dated November 2, 1982 requesting approval of using Lenox's water supply wells for the Resource Conservation and Recovery Act radiological determination. The request is hereby approved, if the data shows that no radiological parameters are present in the water supply, then Lenox, Inc. would not be required to continue monitoring for these constituents in the future.

If you have any questions, I can be contacted at 212-?64-1829.

Sincerely yours,

Robert Gantzer
Environmental Engineer
Solid Waste Branch

NYS 002 325 074

file

cD

0486 - AUG 15 1986

Appendix VIII Sampling at Lenox China, Inc.
EPA I.D. Number NJD002325074

ENVIRONMENTAL PROTECTION AGENCY, REGION II
NEW YORK, N.Y.
1986 AUG 18 PM 1:42
PERMITS ADMINISTRATION BRANCH

Andrew Y. Park, Environmental Engineer
NJ/Caribbean Permit Section (2AWM-SW)

Barry R. Tornick, Chief
NJ/Caribbean Permit Section (2AWM-SW)

Attached is a summary of Appendix VIII sampling at Lenox China, Inc., conducted by Geraghty & Miller, Inc., a contractor for the facility, on July 17, 1986.

If you have any questions, please contact me.

Attachment

bcc: Laura Livingston, 2PM-PA w/attach. ✓
Andy Park, 2AWM-SW w/attach.
Sharon Jaffess, 2AWM-SW w/attach.

Summary

Site visit to Lenox China, Inc. (NJD002325074) was conducted on July 17, 1986. Purpose of the site visit was to monitor the Quality Assurance/Quality Control (QA/QC) procedure of sampling for Appendix VIII analyses. Following individuals were involved:

EPA	:	Andrew Park, Environmental Engineer
Geraghty & Miller, Inc.	:	Rob Raskin, Chemist
		Kathy Gilroy, Geologist
Lenox China, Inc.	:	Bill Simmons, Senior Technician

Geraghty & Miller, Inc. (GMI), a contractor for Lenox China, Inc., had a plan of sampling not only for Appendix VIII analyses but also from impoundments and other groundwater monitoring wells. Attached is GMI's sampling plan for that date. According to the plan, monitoring Wells #1, 3, 4, and 10 were to be sampled for analyses of Appendix VIII parameters.

In the morning of the sampling date, GMI found out that sampling bottles for cyanides and sulfides were not sent by its contractor, Rocky Mountain Analytical Laboratory. Mr. Simmons had his staff prepare sampling bottles and preservatives for sampling of cyanides and sulfides. The bottles were prepared about 3:00 p.m.

Due to unavailability of the sampling bottles for cyanides and sulfides, sampling started at Wells #6, 7, and 8 for which analyses for Appendix VIII are not required. Sampling for Appendix VIII analyses started around 2:00 p.m. at Well #4, and was completed about 3:40 p.m. Sampling at Well #3 started about 4:15 p.m. The next day, Ms. Gilroy of GMI was contacted and she said that sampling from the remaining wells was completed around 8:00 p.m. During a follow-up telephone conversation with Ms. Gilroy on August 1, 1986, she indicated that, using new sampling bottles provided by Rocky Mountain Analytical Laboratory, GMI resampled groundwater on July 23, 1986 for analyses of cyanides and sulfides from the proposed monitoring wells.

No significantly wrong or faulty procedure during sampling was found. However, a question may be raised whether 50 gallons of groundwater is sufficient for purging the wells. About 50 gallons of groundwater (4 gal/min, 13 min) was pumped from the wells without having the level of water in each well measured. According to David Schantez from GMI, a normal range of groundwater level is 15 feet to 20 feet, and 50 gallons purging of groundwater has been normally done before sampling. He also indicated that based upon the normal level of groundwater, 50 gallons should be in the range of three to five times, or maybe more, of water volume in the wells. In addition, it should be further noted that sampling for cyanides and sulfides was conducted about one week after the initial sampling on July 17, 1986. Any interpretation of results on data for cyanides and sulfides should reflect, if any, an effect of this time interval between sampling on the results.

Sampling Procedure

a) Purging: Purging of groundwater was done by pumping through a teflon tubing (about 1/2" ID) by a centrifugal pump (Tanaka QCP-121, Maximum Discharge 120 gal/min). About 50 gallons of groundwater (4 gal/min, 13 min) was purged.

b) Sampling: After completion of purging, new tygon teflon tubing (about 1/8" ID) was lowered into the well until the end of tube was submerged into groundwater. Samples were collected by pumping groundwater through this tube. A perimetric pump was used for pumping and its pumping rate is not available. The following is a description of sampling bottles used for collecting samples for analyses of different parameters:

   - Three small vial (about 10 - 15 ml) for volatile organics.
   - Four large bottles (about 300 400 ml) for Base/Neutral/Acid extractable materials (B/N/A), Pesticides, Herbicides, Poly-chlori- Poly-chlorinated biphenyl (PCBs).
   - One gallon jug for metals, cyanides, sulfides, fluorides. The sample in this jug was prefiltered and filtered through 0.45 filter paper before being transferred into four different sampling bottles.

Observation

a) New tubes were used for each well. Possible intercontamination was reduced.

b) Lock of monitoring Well #3 was broken and there was no cap on the top of the Well.

c) High turbid water was pumped at the beginning of purging but its turbidity was gradually reduced. At the time of completion of purging, groundwater is relatively clear.

d) Mud was observed at the bottom of tube after completion of purging.

e) 50 gallons of groundwater were purged throughout the wells without having a level of groundwater in each well be measured.

f) Sampling for cyanides and sulfides was conducted about one week after the initial sampling for the other parameters in Appendix VIII.

GMI's SAMPLING PLAN FOR LENOX CHINA

JULY 1986 SAMPLING

Wells 1, 4, 6, 7, 8

Ammonia-N
Arsenic
Barium
Cadmium
Chloride
Chromium (hexavelent)
Coliform Bacteria
Fluoride
Iron
Kjeldahl-N
Lead
Manganese
Mercury
Nitrate-N
Phenols
Selenium
Silver
Sodium
Sulfate
Total dissolved solids
Total organic carbon
Total organic halogens

Wells 1, 4

Modified Apendix VIII list not already listed above except chlorinated dioxins and furans.

Impoundment Samples (3)

Chromium (total)
COD
Lead
Nitrite-N + Nitrate-N
Phosphorous
Total dissolved solids
Total organic carbon
Total suspended solids

Well 9

Lead
Sulfate
Total dissolved solids
Total organic carbon

Wells 3, 10

Sulfate
Total dissolved solids
Total organic carbon
Modified Appendix VIII list except chlorinated dioxins and and furans.

Copies to Andy and Angel (OD)

RECEIVED 9/29

Let's protect our earth

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
TRENTON, NEW JERSEY 08625
WATER QUALITY MANAGEMENT

GEORGE G. McCANN, P.E.
DIRECTOR

DIRK C. HOFMAN, P.E.
DEPUTY DIRECTOR

NJ 002 325 074

CA86- SEP 25 1986

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. A.J. Gustray, Director
Facilities Engineering
Lenox China, Inc.
Tilton Road
Pomona, New Jersey 08240

file NJD002325074

Re: Appendix VIII Analyses

Dear Mr. Gustray:

The Department has received and reviewed the modified Appendix VIII analyses for wells 1, 3, 4 and 10 at the Lenox China facility. The hazardous constituent, tricholorethene, was found to be present in well #10 at a concentration of 370 ppb.

The Appendix VIII sampling round was to have determined whether or not the regulated units have discharged hazardous constituents to the ground water. Pursuant to the June 16, 1986 discussion between Ms. Davies of my staff and Mr. Saar of Geraghty and Miller and the July 15, 1986 letter from NJDEP to Lenox China, Lenox was to have sampled well #9, not well #10, for the modified Appendix VIII list of constituents. Well #9 is hydraulically downgradient of the regulated units and hydraulically upgradient of the former solid waste management unit (dredge area). Well #10 is hydraulically downgradient of all three units. The appearance of TCE in well #10 does not indicate whether or not the regulated unit or the solid waste management area is the source of the contamination; however, pursuant to N.J.A.C. 7:14A-6.15(b)vi, the TCE is assumed to have originated from the regulated units. Contamination from the regulated units will necessitate additional programs involving ground water monitoring and post-closure care.

Therefore, Lenox China is to immediately sample and analyse monitoring well #9 for the full list of priority pollutants to determine the possible source and extent of the TCE contamination. The analyses shall be submitted to the Ground Water Quality Control Section within the Bureau of Ground Water Quality Management as soon as they become available but no later than thirty (30) days of receipt of this letter.

If you have any questions regarding this matter, please contact Ms. Davies at (609) 292-0424.

Sincerely yours,

Original Signed
and Mailed

Kenneth Siet, Section Chief
Ground Water Quality Control

WQM141

cc: Barry Tornick, USEPA Region II
Ernie Kuhlwein, Bureau of Haz. Waste Eng.

NJ 002325 074 6D

State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625-0028

Scott A. Weiner
Commissioner

Karl J. Delaney
Director

VIA FACSIMILE
CERTIFIED MAIL
RETURN RECEIPT REQUESTED
NO._____

CA-93 — MAR 18 1993

Mr. Stephen F. Lichtenstein
Lenox Inc.
Lawrenceville, N.J. 08648-2394

Dear Mr. Lichtenstein:

Re: **Lenox China - Pomona**
Galloway Township, Atlantic County
Ground Water Sampling and Analysis Plan Revisions

The New Jersey Department of Environmental Protection and Energy (Department) and the United States Environmental Protection Agency (EPA) have reviewed the above referenced correspondence on behalf of Lenox China (Lenox) and received on November 19, 1992. The Department and EPA have determined that the above referenced revision is approved with the following modifications:

1. Well Evacuation Procedures (p. 3) - Evacuation tubing must be constructed of ASTM Drinking Water Grade Polyethylene. If a centrifugal pump is utilized to evacuate a well, the associated tubing must be equipped with a foot check valve to prevent aerated water from back flushing into the well. The check valves should be constructed of polyethylene and decontaminated using the following procedure:

   A. Non-phosphate soap and water wash
   B. Potable water rinse
   C. Distilled/deionized water rinse

   Lenox must state the construction of the tubing that threads around the peristaltic pumps rotor.

2. Well Sampling Procedures (p.4) - Any bailer material (leader line, rope, bailer) contacting the ground water must be made of an inert substance that will not react with the ground water. Use of a cotton rope as a leader line is not acceptable because it is not an inert substance. The Department recommends that Lenox use a teflon coated stainless steel leader line and polypropylene rope for ground water sampling.

3. Well Sampling Procedures (p. 4) - Due to a pressure gradient that is created during operation of the peristaltic pump, samples may not be collected for volatile organic compounds.

4. Well Sampling Procedures (p. 4) - Depending upon the monitoring well's ability to recharge, time lapse between evacuation and sampling should not exceed two hours.

5. Well Sampling Procedures (p. 5-6) - What is the construction of the membrane filter?

6. Well Sampling Procedures (p. 5-6) - It is recommended that the list of parameters be expanded to include Total Metals (see comment below on Table 1).

7. Well Sampling - On November 10, 1992 the Department issued correspondence to Lenox requiring the installation of two (2) extra monitor wells in addition to the three (3) proposed by Lenox along the northern edge of White Horse Pike for reasons contained therein. Lenox has never responded to this correspondence. With the modified NJPDES-DGW permit now in effect, the Department is requiring these wells be installed as part of the permit requirements of Part VI (RCRA Facility Investigation) and Part VIII-DGW-I (Corrective Measures Implementation).

8. Field QA/QC Procedures (p.9) - Trip blanks should only be prepared and analyzed for volatile organic compounds. For further information, please refer to the NJDEPE Field Sampling Procedures Manual Quality Assurance Samples attachment (see enclosure).

9. Field QA/QC Procedures (p.9) - Field and trip blank samples must travel with sample containers and must arrive on site within one day of their preparation in the lab. Blanks and their associated samples may be held on site for no longer than two (2) calendar days, and must arrive back in the lab within one (1) day of shipment from the field.

10. QA/QC of Data - Pursuant to Part III (p. 3 of 11), Section 12, the laboratory must follow the Quality Assurance/Quality Control (QA/QC) procedures of the Division of Publicly Funded Site Remediation (DPFSR) QA/QC package. Lenox must submit a full deliverables package for a QA/QC validation review.

11. Table 1, (p. 11) - This table indicates that the samples to be analyzed for heavy metals will be filtered through a 0.45 micron filter. Lenox will now be required to sample for total metals. As a result of Departmental changes, ground water analysis

of metals must be performed on unfiltered samples under Lenox's detection and corrective action monitoring requirements at the site. In addition, the Department **requires** metals analysis to be performed on **unfiltered** ground water samples pursuant to the requirements of the Safe Drinking Water Act, the Clean Water Act and the field sampling procedures manual (FSPM, May 1992, p.178). If Lenox wishes to do filtered samples in addition to unfiltered samples for comparison purposes, this would be acceptable, however, only the unfiltered samples will be accepted as being in compliance with Departmental requirements.

Should you have any questions, please contact me at (609) 633-1455.

Sincerely,

Frank Faranca

Frank Faranca, Project Manager
Bureau of Federal Case Management

Enclosure
FFF
c: Andrew Park, USEPA, Region II
Daryl Clark, NJDEPE/DPFSR/BGWPA
John Evenson, NJDEPE/DPFSR/BEMQA/EAS
John Kinkela, Lenox China, Pomona Facility

NJDEPE FIELD SAMPLING PROCEDURES MANUAL

QUALITY ASSURANCE SAMPLES

1. NON-AQUEOUS MATRIX

a. Field Blanks

i. Description - The performance of field blanks requires two (2) sets of identical bottles; one set filled with demonstrated analyte free water provided by the laboratory performing the sample analysis, and one empty set of bottles. The bottles should also be identical to those provided for aqueous sample collection. Note: Since field blanks are aqueous, the lab must provide water for volatile analysis in 40 ml septum vials and they should be preserved accordingly. At the field location, in an area suspected to be contaminated, the water is passed from the full set of bottles through the dedicated or field decontaminated sampling device(s) and into the empty set of bottles. This will constitute identical bottle to bottle transfer. Field blanks only need to be collected and analyzed for volatile organics when volatile organics constitute a parameter being investigated. On a site specific basis, QA parameter requirements may be amended at the discretion of NJDEPE. Note: for logistical purposes it is recommended that the lab provide at least one extra full 40 ml vial to perform the field blank.

Note: for actual soil VOA sample collection the lab may provide 4 oz wide mouth bottles.

ii. Frequency - For sampling events lasting more than one day, field blanks for the non-aqueous matrix should be performed at a rate of 10% of the total number of samples collected throughout the event. If, for example, 40 samples were to be collected over a six day period, then only four field blanks would be required. For one-day sampling events, with the total number of samples collected being less than 10, it is required that one field blank be collected. On a site specific basis, QA frequency requirements may be amended at the discretion of NJDEPE. However, it is not necessary to collect more than one field blank per day.

b. Trip Blanks

TRIP BLANKS ARE NOT REQUIRED FOR THE NON-AQUEOUS MATRIX unless specifically requested for Special Analytical Services (SAS) by NJDEPE.

2. AQUEOUS MATRIX

a. Field Blanks

i. Description - Same as a.1. above with one exception: Field blanks must be analyzed for all the same parameters as samples collected that day.

ii. Field Blanks are generally not required for potable well sampling events or when a sample is collected directly from a source into a sampling container.

iii. Field Blanks may be required to detect cross contamination from ambient air during potable sampling events if known sources of contamination are within close proximity or monitoring instruments indicate the presence of contamination above background levels.

iv. Frequency - Field blanks for the aqueous matrix must be performed at a rate of one per day.

b. Trip Blanks

i. Description - Trip blanks are required for aqueous sampling events. They consist of a set of sample bottles filled at the laboratory with laboratory demonstrated analyte free water. These samples then accompany the bottles that are prepared at the lab into the field and back to the laboratory, along with the collected samples for analysis. These bottles are never opened in the field. Trip blanks must return to the lab with the same set of bottles they accompanied to the field. At a minimum trip blanks must be analyzed for volatile organic parameters. The inclusion of additional parameters or amendments to the requirements for trip blanks is at the discretion of NJDEPE. Trip blanks and associated samples shall not be held on site for more than two (2) calendar days.

ii. Frequency - Trip blanks must be included at a rate of one per sample shipment (not to exceed two (2) consecutive field days).

3. BLANK WATER QUALITY

The demonstrated analyte free water used in the field and trip blanks must originate from one common source and physical location within the laboratory and must be the same as the method blank water used by the laboratory performing the specific analysis. The use of commercially

prepared water or water not originating from the laboratory analyzing the samples is not permitted. An exception to this requirement is allowable if:

1. it is the same water used for method blank analysis,
2. the laboratory has analyzed that water and generated data from a specific batch/lot of containers,
3. the blank sample is drawn from an unopened container from the same batch/lot thus documenting the water is free of contaminants (demonstrated analyte free).

The laboratory performing the analysis may be required to provide documentation that trip and field blank water was demonstrated analyte free if contamination is detected in blanks, or at NJDEPE's discretion. This would be verified by analytical results of method blanks run by the laboratory on the day of trip and field blank preparation and shipment. This does not, however, change requirements for the analysis of method blanks on the day of sample analysis at the laboratory.

4. SAMPLE HANDLING AND HOLDING TIMES

a. Handling Time

Field and trip blank samples must travel with sample containers and must arrive on-site within one day of their preparation in the lab. Blanks and their associated samples may be held on-site for no longer than two calendar days, and must arrive back in the lab within one day of shipment from the field. This constitutes a maximum of a four (4) day handling time. Blanks and all samples must be maintained at 4°C while stored on-site and during shipment. Sample bottles and blanks must be handled in the same manner prior to their return to the laboratory.

The only acceptable exception to handling time requirements is when sampling stormwater runoff. The spontaneity of storm conditions precludes any possibility for preplanning sample bottle shipment. Therefore, due to these obvious logistical constraints, trip and field blanks are not normally required.

While the exception is understandable, the storage of these sample bottles must be carefully controlled to ensure the possibility of cross contamination is kept to an absolute minimum.

b. Maximum Holding Time

The clock governing holding times for samples and blanks analyzed by Contract Laboratory Program (CLP) methodologies begins when the sample is received in the laboratory as documented on the lab's chain of custody form verified time of sample receipt (VTSR). Holding times for individual parameters are dictated by the specific analytical method being used. The holding time clock for samples and blanks analyzed by SW-846 or 40 CFR, Parts 136 and 141, begins at the time of sample collection. For NJPDES, the holding times are those cited in 40 CFR 136.3.

a. Duplicate Samples Obtained in the Field

Duplicate samples are to be included for each matrix at a minimum rate of one for every twenty samples (5% of total) and be submitted to the lab as "blind" samples. If less than twenty samples are collected during a particular sampling episode, one duplicate should be performed. Duplicate requirements may be waived or expanded depending on the particular regulatory program or remedial phase involved.

NJ 002-325-0744 6D

State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625-0028

Scott A. Weiner
Commissioner

Karl J. Delaney
Director

VIA FACSIMILE
CERTIFIED MAIL
RETURN RECEIPT REQUESTED
NO. P 642 608

CA 93- MAY 26 1993

Mr. Stephen F. Lichtenstein
Lenox Inc.
Lawrenceville, N.J. 08648-2394

Dear Mr. Lichtenstein:

Re: **Lenox China - Pomona**
Galloway Township, Atlantic County
TCLP Results of the Tilton Pond Sludge

The New Jersey Department of Environmental Protection and Energy (Department) has reviewed the February 1993 Quarterly Ground Water Sampling Results prepared by Earth Sciences Consultants Inc. on behalf of Lenox China (Lenox). Included in this report was the results of the annual TCLP test that Lenox is required to perform on the Tilton Road Pond sludge.

The initial laboratory results indicate that the sludge is hazardous due to arsenic. Lenox subsequently collected an additional composite sludge sample and split this sample between two (2) laboratories (Lancaster and Anatech). Lenox claims that the results for the additional sample were nonhazardous for the resampled sludge in its submittal. In addition, Anatech is not currently a New Jersey certified laboratory.

The Department and EPA have determined that Lenox must submit to the Department and EPA the appropriate documents and reports concerning the resampling of the Tilton Road Pond sludge. All site characterization sampling must be done by TAL metals at defined locations, as the TCLP test and composite sampling are strictly used for the classification of waste prior to disposal and are not intended for site characterization.

If you have any questions, please contact me at (609) 633-1455.

Sincerely,

Frank Faranca, Project Manager
Bureau of Federal Case Management

FFF

c: Andrew Park, USEPA, Region III
Daryl Clark, NJDEPE/DPFSR/BGWPA
John Kinkela, Lenox China, Pomona Facility

NJD 002325074

6D

eder associates
environmental scientists and engineers

OFFICES:
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Ann Arbor, MI
Augusta, GA
Jacksonville, FL
Trenton, NJ
Tampa, FL

December 6, 1994
File #530-07

Mr. Frank F. Faranca, Case Manager
New Jersey Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Federal Case Management
CN 028
401 East State Street
Trenton, New Jersey 08625-0028

Re: Lenox China
Pomona, New Jersey

Dear Mr. Faranca:

This letter provides notice to NJDEP that one monitoring well installed by Lenox along White Horse Pike was found damaged on November 18, 1994. The following information is provided in accordance with Part III, Item 6 of the Lenox NJPDES-DGW Permit.

1. The damaged well is MW-76.

2. The well was apparently damaged when the New Jersey Department of Transportation regraded the White Horse Pike roadway shoulder. The concrete seal around the MW-76 curb box was broken, but the PVC casing was not damaged.

3. The next sampling round is scheduled for February 1995. The White Horse Pike Wells are sampled quarterly to monitor the effectiveness of the Groundwater Corrective Action System.

4. The well will be repaired during the week of December 5, 1994 by a New Jersey licensed well driller. The well will be sampled during the next quarterly monitoring round.

Please call if you have any questions.

Very truly yours,

EDER ASSOCIATES

Mark Foley
Project Hydrogeologist

cc: A. Park
L. Fantin
A. Gustray
G. Berman

6D1

State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection

Robert C. Shinn, Jr.
Commissioner

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
NO._____

JAN 18 1995

Mr. Louis A. Fantin, Esq, Vice President
Lenox Incorporated
100 Lenox Drive
Lawrenceville, N.J. 08648-2394

NJD 002 3250 74

Dear Mr. Fantin:

Re: **Ground Water Corrective Action System**
Lenox Correspondences (12/8/94 & 12/29/94)
Galloway Township, Atlantic County

The New Jersey Department of Environmental Protection (NJDEP) and the U.S. Environmental Protection Agency (EPA) have reviewed the above referenced correspondences prepared by Eder Associates on behalf of Lenox Incorporated (Lenox). The NJDEP and EPA have concluded that the proposal is approved with the following comments:

1. The December 29, 1994 letter states that Lenox will install six (6) pairs of well clusters [twelve (12) total well points] down gradient of the recovery wells at the locations specified in their letter. Each location will have two (2) well points, one screened at approximately 20 feet and one screened at approximately 55 to 60 feet below grade. This proposal is acceptable.

2. The well point installation procedures outlined in the December 8, 1994 letter and modified in the December 29, 1994 letter indicates that small diameter steel riser pipe attached to a well screen will be hand driven using a tripod at each location. A concrete collar and a protective steel casing with locking cap will be placed over each well point. This proposal is acceptable provided that the well points are not constructed of galvanized steel. The riser and screen can be constructed of carbon steel.

3. Lenox states that they will proceed with obtaining access agreements for the well point installations on the condition that permitting requirements are waived by the Bureau of Water Allocations for the temporary well points. A waiver from the Bureau of Water Allocation is not required. The Bureau of Federal Case Management and the Bureau of Ground Water Pollution Abatement has accepted and approved the installation of hand driven well points for the Lenox site. The Bureau of Water Allocation; however, still requires that well permits be obtained for the installation of well points.

Should you have any questions, please contact me at (609) 633-1455.

Sincerely,

Frank Faranca

Frank Faranca, Project Manager
Bureau of Federal Case Management

c: Dennis Schwab, NJDEP/Bureau of Water Allocation
Andrew Park, USEPA, Region II
Daryl Clark, NJDEP/DPFSR/BGWPA
Todd DeJesus, Pinelands Commission
Sean Clancy, ACHD

eder associates
environmental scientists and engineers
480 Forest Avenue
Locust Valley, New York 11560-0707
Telephone: (516) 671-8440/FAX: (516) 671-3349

FACSIMILE TRANSMITTAL SHEET

Date: 1/19
Time: 2pm
Job #: 530-3.3
Telecopier #: 212 264 6155

TO: Andy Bork
USEPA
FROM: Jim Baird

SUBJECT: Lenox China - Correspondence between Eder & NJDEP regarding the installation of well points at the Lenox, Pomona site. For your file

Jim

Number of Pages to Follow: 6

If you receive this communication in error, or if you encountered any problems with transmission, please telephone us at (516) 671-8440.

Original will follow: ☒ No ☐ by Regular Mail ☐ by Federal Express

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environmental scientists and engineers

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Ann Arbor, MI
Augusta, GA
Jacksonville, FL
Trenton, NJ
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December 8, 1994
File #530-3.3

Frank F. Faranca, Case Manager
New Jersey Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Federal Case Management
CN028
401 East State Street
Trenton, New Jersey 08625-0028

Re: Lenox China Groundwater Corrective Action System
Pomona, New Jersey

Dear Mr. Faranca:

This letter responds to your November 29, 1994 letter to Mr. Louis A. Fantin, Esq. of Lenox, Incorporated regarding the effectiveness of the groundwater corrective action system (GWCAS). Lenox believes that the effectiveness of the GWCAS has been clearly demonstrated by the environmental data base developed since the extraction system started in 1991. The quarterly groundwater monitoring results have not shown any significant increase in downgradient TCE concentrations at the White Horse Pike or residential supply wells. It would be expected that if the GWCAS was not intercepting the TCE plumes migrating from the Lenox property, much higher concentrations of TCE would be found in these downgradient wells. The downgradient concentrations of TCE at the White Horse Pike wells have generally been less than 5 ug/l. Groundwater elevation measurements made during the November 1993 quarterly monitoring round demonstrated that, under specific regional water table elevation conditions, the GWCAS can effect downgradient capture as far as White Horse Pike. The effectiveness of the GWCAS was also supported by the information provided in Eder's November 2, 1994 letter to you which showed that there is a nearly three-fold difference between the amount of water transmitted by the aquifer and the amount of water extracted by the GWCAS.

Notwithstanding our position, Lenox will consider installing four pairs of temporary well points downgradient of the recovery wells as outlined in your November 29 letter, provided that your Bureau obtains a waiver of any permitting requirements from the Bureau of Water Allocation. Lenox understands that the Department's definition of a well point is a small diameter (0.5 to 1 inch) steel riser pipe attached to a well screen which can be driven by hand

Continued . . .

480 FOREST AVE., P. O. BOX 707, LOCUST VALLEY, NEW YORK 11560-0707 • (516) 671-8440 • FAX (516) 671-3349

Frank F. Faranca
New Jersey Department of
Environmental Protection
December 8, 1994

to the desired monitoring depth. Filter packs and bentonite grout are not used in these types of wells. A waiver is required because a temporary well point (which is not constructed in accord with the Bureau's requirements for monitoring wells) cannot remain in the ground for more that 48 hours after it is installed unless a monitoring well permit from the Bureau of Water Allocation is obtained. The estimated time frame to install and survey the temporary well points is three days. It is our understanding that the Bureau of Water Allocation will not issue permits for the temporary well points because they are not constructed in accord with the Bureau's specifications (minimum size borehole, sand filter pack, grout seal). Lenox is requesting that your Bureau obtain a waiver from the Bureau's permitting requirements to allow the well points to remain in the ground for up to two weeks after installation. These temporary well points are adequate for our purposes and, as the well points will be installed on private property which is not developed and is not used for any operations which could cause a release of contaminants to the surface soil, a waiver from the Bureau's permitting requirements should be granted.

All of the temporary well points will be installed by a New Jersey licensed well driller at the following locations as described in the November 29 letter.

- downgradient and between RW-2 and RW-3
- downgradient of RW-4
- downgradient and between RW-5 and RW-6
- downgradient of RW-7

The distance from the recovery well line to the furthest well point will be approximately 80 feet to confirm that the GWCAS causes a downgradient reversal in groundwater flow direction. This distance was selected based on aquifer characteristic data developed by Geraghty & Miller in 1990. The second well point at each location described above will be installed approximately 40 feet downgradient of the recovery wells. The well points will be set at a depth of 60 feet below grade so that the well point screens coincide with the interval screened by the extraction wells. The 60 foot depth was also selected because partial penetration effects would have to be taken into account if the well points were installed at a shallower depth.

Continued . . .

Frank F. Faranca
New Jersey Department of
Environmental Protection
December 8, 1994

The temporary well points will be installed using a tripod to minimize impact to the properties (tree clearing and road construction) which would otherwise be necessary if the wells were installed by a drill rig. Lenox proposes to install the well points during the Spring (March, April, or May) of 1995. The water table elevations are generally the highest during the Spring and this will provide a "worst case scenario" to demonstrate the effectiveness of the GWCAS. It is expected that the wells can be installed and surveyed in approximately three days. Lenox will monitor groundwater elevations in the well points and upgradient piezometers over a two week period to develop the data base necessary to assess the extent of capture produced by the recovery well system. The well points will be removed and the bore holes sealed in accordance with NJDEP requirements after the monitoring program is completed.

The installation of the temporary well points is conditioned on Lenox obtaining access agreements from the owners of the properties on which the well points will be installed. Lenox will use reasonable efforts to obtain access agreements after it receives written notification that the Bureau has waived its permit requirements for these temporary well points.

Please call me if you have any questions or require additional information.

Very truly yours,

EDER ASSOCIATES

James M. Barish
Hydrogeologist
JMB/cg

cc: L. Fantin, Esq.
J. Kinkela
G. Berman
F. Inyard
N. Andrianas
M. Foley

CG4452

eder associates
environmental scientists and engineers

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Augusta, GA
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Trenton, NJ
Tampa, FL

December 29, 1994
File # 530-3.3

Mr. Frank F. Faranca, Case Manager
New Jersey Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Federal Case Management
CN028
401 East State Street
Trenton, New Jersey 08625-0028

Re: Well Point Installation
Lenox China, Pomona, New Jersey

Dear Mr. Faranca:

This letter confirms the agreements reached during our December 19, 1994 conference call regarding the installation of well points downgradient of the recovery well system at the Pomona facility. It was agreed that Lenox will install six pairs of well clusters at the locations shown on the attached figure. The locations were approved by NJDEP during my December 21 telephone conversation with Mr. Daryl Clark.

Two well points will be installed at each of the following locations shown on the attached figure:

- Downgradient and between recovery wells RW-3 and RW-4
- Downgradient of recovery well RW-5
- Downgradient and between recovery wells RW-6 and RW-7

One well point will be screened approximately 20 feet below grade, as requested by NJDEP, and the second well point will be screened approximately 55 to 60 feet below grade, as previously proposed. The distance from the recovery well line to the nearest well point cluster will be approximately 40 feet. The second well point cluster at each location mentioned above will be installed approximately 80 feet downgradient of the recovery wells.

The well points will be installed as described in Eder's December 8, 1994 letter to NJDEP with the following modifications as requested by the Department:

- A concrete collar extending approximately three feet below grade will be placed around each well point

Continued . . .

Mr. Frank F. Faranca, Case Manager
New Jersey Department of Environmental Protection
December 29, 1994

- A protective steel casing with locking cap will be placed over each well point and set into the concrete collar

Eder's December 8 letter to NJDEP stated that Lenox must obtain access agreements from the owners of the properties on which the well points will be installed. Lenox will proceed with this task on condition that the Bureau provides written notice to Lenox stating that the Bureau of Water Allocation has waived permitting requirements for the temporary well points.

Please call me if you have any questions.

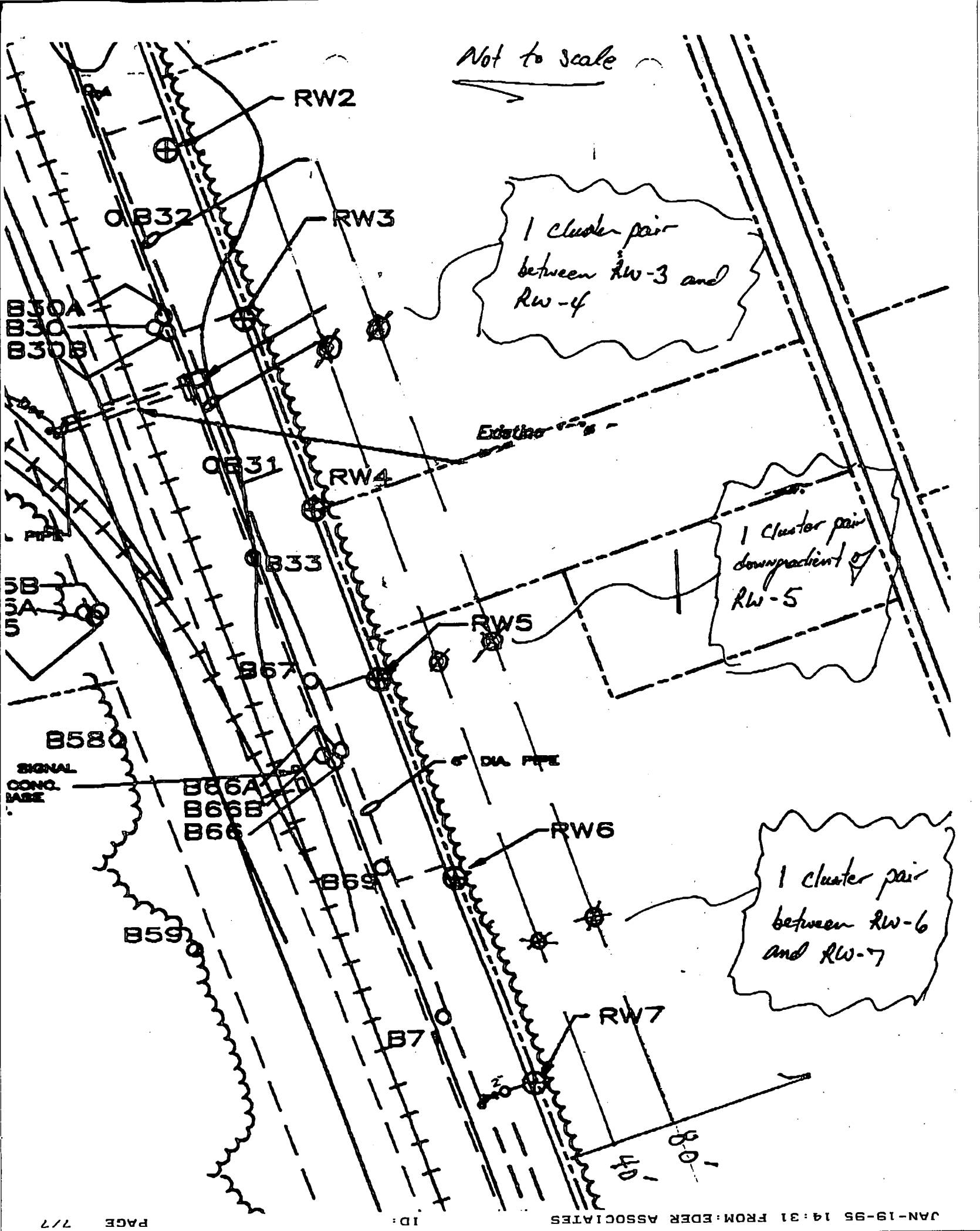
Very truly yours,

EDER ASSOCIATES

James M. Barish
Hydrogeologist

cc: L. Fantin, Esq.
J. Kinkela
G. Berman
R. Inyard
N. Andrianas
M. Foley

MA2347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1 cluster pair downgradient of RW-5
1 cluster pair between RW-6 and RW-7
6" DIA. PIPE
SIGNAL
CONC.
BASE

401

State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection

Robert C. Shinn, Jr.
Commissioner

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
NO._____

MAR 3 1995

Mr. Louis A. Fantin, Esq, Vice President
Lenox Incorporated
100 Lenox Drive
Lawrenceville, N.J. 08648-2394

NJD002325074

Dear Mr. Fantin:

Re: **Lenox China Incorporated**
Geoprobe® Ground Water Sampling Results
Galloway Township, Atlantic County

The New Jersey Department of Environmental Protection (NJDEP) and the U.S. Environmental Protection Agency (EPA) have reviewed the above referenced report prepared by Eder Associates on behalf of Lenox Incorporated (Lenox) dated February 10, 1995. The purpose of the geoprobe® investigation was to define the eastern extent of the TCE plume and determine the optimal location for installing a monitor well. Based on the results of the laboratory analysis of the geoprobe ground water samples, the NJDEP and EPA finds the proposed well location at GP-4 to be acceptable. Installation of this well must follow NJDEP requirements and specifications for unconsolidated aquifers.

Should you have any questions, please contact me at (609) 633-1455.

Sincerely,

Frank Faranca

Frank Faranca, Project Manager
Bureau of Federal Case Management

c: Andrew Park, USEPA, Region II
Daryl Clark, NJDEP/DPFSR/BGWPA
Todd DeJesus, Pinelands Commission
Sean Clancy, ACHD

RPCE\BFCM\LENOX\LENOX18.FFF

6 D1

State of New Jersey

Department of Environmental Protection

Christine Todd Whitman
Governor

Robert C. Shinn, Jr.
Commissioner

CERTIFIED MAIL
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NO._____

NJD002325074

MAY 24 1995

Mr. Louis A. Fantin, Esq., Vice President
Lenox Incorporated
100 Lenox Drive
Lawrenceville, N.J. 08648-2394

Dear Mr. Fantin:

Re: **Lenox China Facility**
Quarterly Discharge to Ground Water Report (February 1995)
Galloway Township, Atlantic County

The New Jersey Department of Environmental Protection (Department), the U.S. Environmental Protection Agency (EPA) have reviewed the above referenced report prepared by Eder Associates on behalf of Lenox Incorporated (Lenox) received May 2, 1995 for facility wide monitoring. The Department and EPA have determined that the Report is approved.

Should you have any questions, please contact me at (609) 633-1455.

Sincerely,

Frank Faranca

Frank Faranca, Project Manager
Bureau of Federal Case Management

c: Andrew Park, USEPA, Region II
Daryl Clark, NJDEPE/DPFSR/BGWPA

AP 601

State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection

Robert C. Shinn, Jr.
Commissioner

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NO. Z161 587 227

OCT 11 1995

Mr. Louis A. Fantin, Esq., Vice President
Lenox Incorporated
100 Lenox Drive
Lawrenceville, N.J. 08648-2394

NJD002 325074

Dear Mr. Fantin:

Re: **Lenox China Facility**
Ground Water Monitoring Program Report
Galloway Township, Atlantic County

The New Jersey Department of Environmental Protection (Department) has received the above referenced ground water report dated September 6, 1995. Lenox China has requested the elimination of selected ground water parameters from further NJPDES-DGW permit monitoring. These parameters include ammonia-nitrogen, color, iron, manganese, odor, sodium, sulfate, total organic carbon and total dissolved solids. The basis for this request is a January 1991 report submitted by Lenox (Justification of Alternative Ground Water Standards) and a statistical analysis performed on ground-water data from November 1982 to May 1995. The data were analyzed using the Kruscal-Wallis nonparametric technique.

It should be noted that prior to the submittal of this report, the Department, in the draft NjPDES-DGW permit No. NJ0086487, had eliminated iron, manganese, odor and total organic carbon from further monitoring. The monitoring for ammonia-nitrogen, sodium, sulfate and total dissolved solids had been reduced from quarterly to annually.

After reviewing the contents of the report, the Department recommends that color also be eliminated from further monitoring. Elimination of ammonia-nitrogen, sodium sulfate and total dissolved solids from ground water monitoring is not recommended. While the statistical analysis performed by Lenox may show a decreasing trend in concentration for these parameters on-site, no data have been presented in this report to show that on-site concentrations have decreased to background levels. Monitoring of ammonia-nitrogen, sodium, sulfate and total dissolved solids is required as long as on-site ground water concentrations exceed background concentrations.

OCT 16 REC'D

Should you have any questions, please contact me at (609) 633-1455.

Sincerely,

Frank Faranca

Frank Faranca, Project Manager
Bureau of Federal Case Management

c: Andrew Park, USEPA, Region II
Daryl Clark, NJDEPE/DPFSR/BGWPA

LENOX33.FPF

601

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

CHRISTINE TODD WHITMAN
Governor

ROBERT C. SHINN, JR.
Commissioner

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MAY 25 1995

NJD002325074

Mr. Louis A. Fantin, Esq., Vice President
Lenox Incorporated
100 Lenox Drive
Lawrenceville, N.J. 08648-2394

Dear Mr. Fantin:

Re: **Lenox China Facility**
Quarterly Discharge to Ground Water Report (February 1995)
Galloway Township, Atlantic County

The New Jersey Department of Environmental Protection (Department), the U.S. Environmental Protection Agency (EPA) have reviewed the above referenced report prepared by Eder Associates on behalf of Lenox Incorporated (Lenox) received May 2, 1995 for facility wide monitoring. The Department and EPA have determined that the Report is approved.

Should you have any questions, please contact me at (609) 633-1455.

Sincerely,

Frank Faranca

Frank Faranca, Project Manager
Bureau of Federal Case Management

c: Andrew Park, USEPA, Region II
Daryl Clark, NJDEPE/DPFSR/BGWPA

AP
601

State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection

Robert C. Shinn, Jr.
Commissioner

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NO. Z161 587 313

NOV 14 1995

Mr. Louis A. Fantin, Esq., Vice President
Lenox Incorporated
100 Lenox Drive
Lawrenceville, N.J. 08648-2394

NJD002 325074

Dear Mr. Fantin:

Re: Lenox China Facility
Ground Water Recovery System Report
Galloway Township, Atlantic County

The New Jersey Department of Environmental Protection (Department) received the above referenced ground water report dated October 9, 1995, prepared by Eder Associates on behalf of Lenox Incorporated. The above document reports the results of water-level measurements taken from six pairs of well points installed downgradient of the TCE recovery well system. Measurements were taken in August and September of 1995. These well points were installed to verify that the recovery wells are causing a reversal of ground-water flow downgradient of the system by creating an inward hydraulic gradient.

A review of the data submitted shows that an inward hydraulic gradient does exist in those areas in most of the downgradient areas where well points were installed and in areas where the highest concentrations of TCE have been measured. Monitoring of the paired well points must be continued by Lenox and the results reported to the Department on a quarterly basis as articulated in the final NJPDES-DGW permit which will become effective on January 1, 1996.

Should you have any questions, please contact me at (609) 633-1455.

Sincerely,

Frank Faranca

Frank Faranca, Project Manager
Bureau of Federal Case Management

c: Andrew Park, USEPA, Region II
Daryl Clark, NJDEPE/DPFSR/BGWPA

LENOX34.FFF

AP

eder associates
environmental scientists and engineers

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October 9, 1995
File #530-3.3

Frank Faranca, Case Manager
New Jersey Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Federal Case Management
CN 028
401 East State Street
Trenton, New Jersey 08625-0028

Re: Lenox China
Pomona, New Jersey

Dear Mr. Faranca:

Lenox installed six pairs of well points downgradient of the recovery well line to monitor the downgradient extent of capture produced by the recovery system. The well points were installed by Absecon Motor Works (Absecon, New Jersey), a New Jersey-licensed well driller, in accord with the procedures outlined in EDER's December 29, 1994 letter to NJDEP and approved by the Department on January 18, 1995. The well locations and top of casing elevations were surveyed by George E. Schilling, L.S., a New Jersey-licensed surveyor. Figure 1 shows the well point locations and the top of casing elevations are summarized in Table 1.

Depth to water measurements were made in the well points and adjacent monitoring wells and piezometers on August 11 with a second round on September 1. The measurements were plotted to develop the groundwater elevation maps shown on Figures 2 to 5. The August and September groundwater elevation data from the shallow and deep well points show that, except for well points 5S, 5D, 6S, and 6D, the zone of influence produced by the extraction system extends to the well point line furthest from the recovery wells. This finding indicates that groundwater flows back toward the recovery system as required by NJDEP. Depth to water data from the White Horse Pike wells show that groundwater elevations along the Pike are higher than the elevations along the recovery well line and that the recovery system produces a zone of influence as far as the White Horse Pike. Although groundwater elevations at well point clusters 5 and 6

Continued . . .

do not indicate that groundwater flows to the southwest, back toward the recovery well line, the elevations at these well points are higher than the elevations at well point clusters 3 and 4, indicating that groundwater flows southeast toward recovery wells RW-4 and RW-5.

Depth to water measurements will be made quarterly during the TCE remediation groundwater monitoring program and the data will be included in the TCE summary report to NJDEP.

Please call me if you have any questions.

Very truly yours,

EDER ASSOCIATES

James M. Barish
Project Manager/Hydrogeology

JMB/llv

cc: A. Park
L. Fantin, Esq.
J. Kinkela
G. Berman

LLV5048

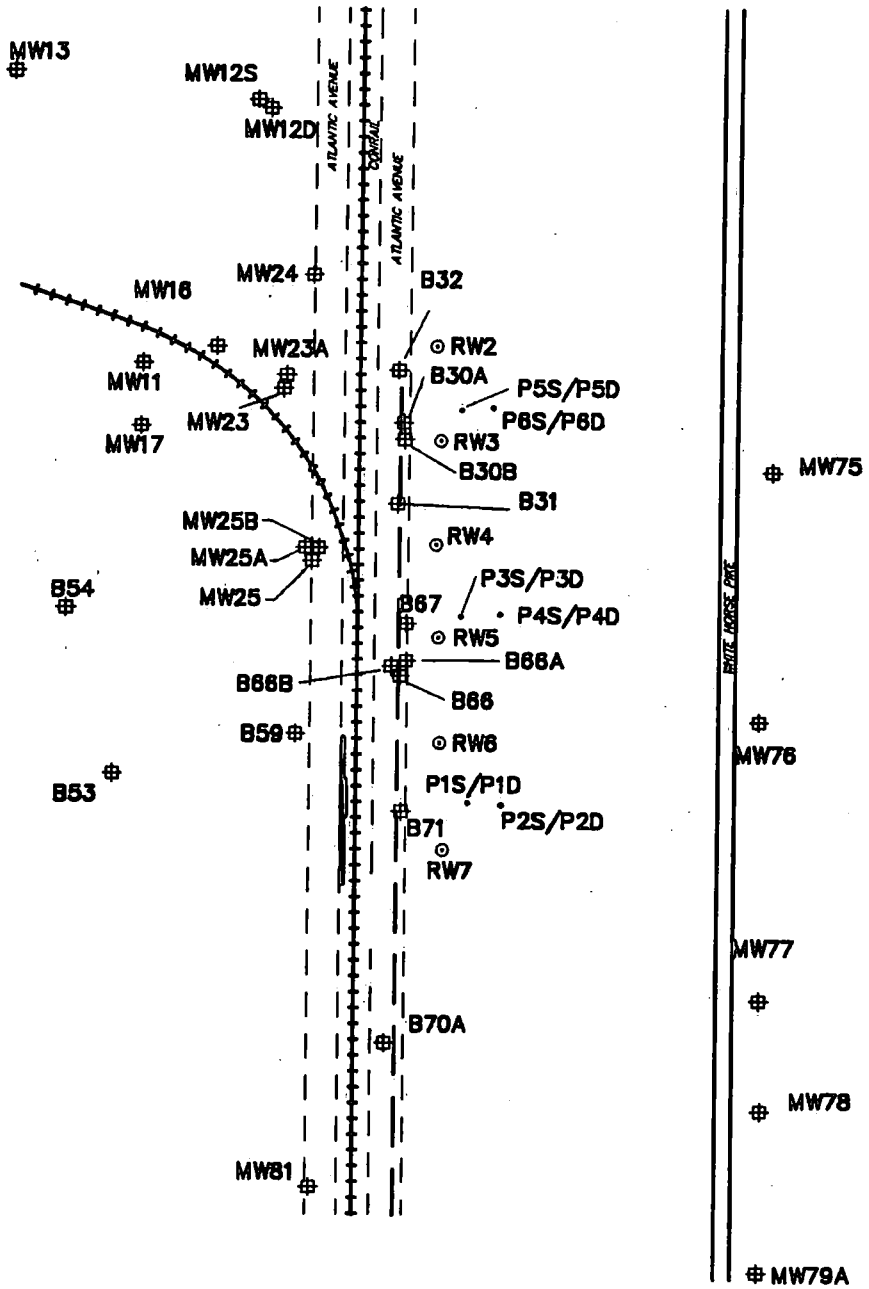
LENOX CHINA
POMONA, NEW JERSEY

TABLE 1

WELL POINT TOP OF CASING ELEVATION

Well Point ID	Top of Casing Elevation
P1S	60.13
P1D	60.32
P2S	60.25
P2D	60.58
P3S	61.34
P3D	60.67
P4S	61.34
P4D	60.97
P5S	60.30
P5D	60.70
P6S	60.47
P6D	60.66

NOTE: Elevation measurements are feet above mean sea level.



LEGEND

PS1.	LOCATION OF WELL POINT
B65 ⊕	LOCATION OF MONITORING WELL
RW5 ⊙	LOCATION OF RECOVERY WELL

Base Map Obtained From Geraghty & Miller's August 1992 Groundwater Monitoring Report.

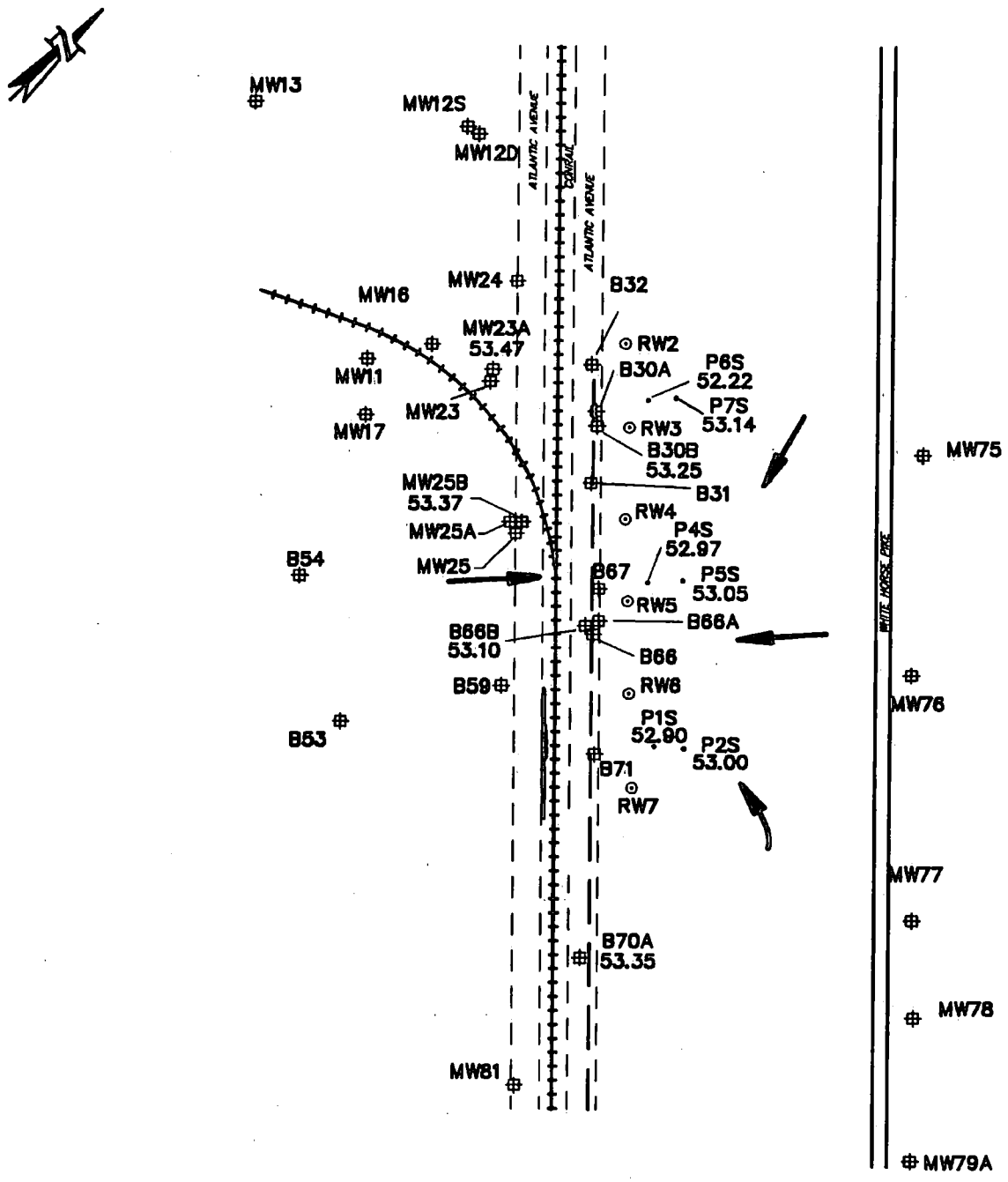
0 300

Scale In Feet

WELL LOCATION PLAN

LENOX CHINA
POMONA, NEW JERSEY

SK5303BP
100595



0 300

Scale in Feet

LEGEND

PS1. LOCATION OF WELL POINT

B65 LOCATION OF MONITORING WELL

RW5 LOCATION OF RECOVERY WELL

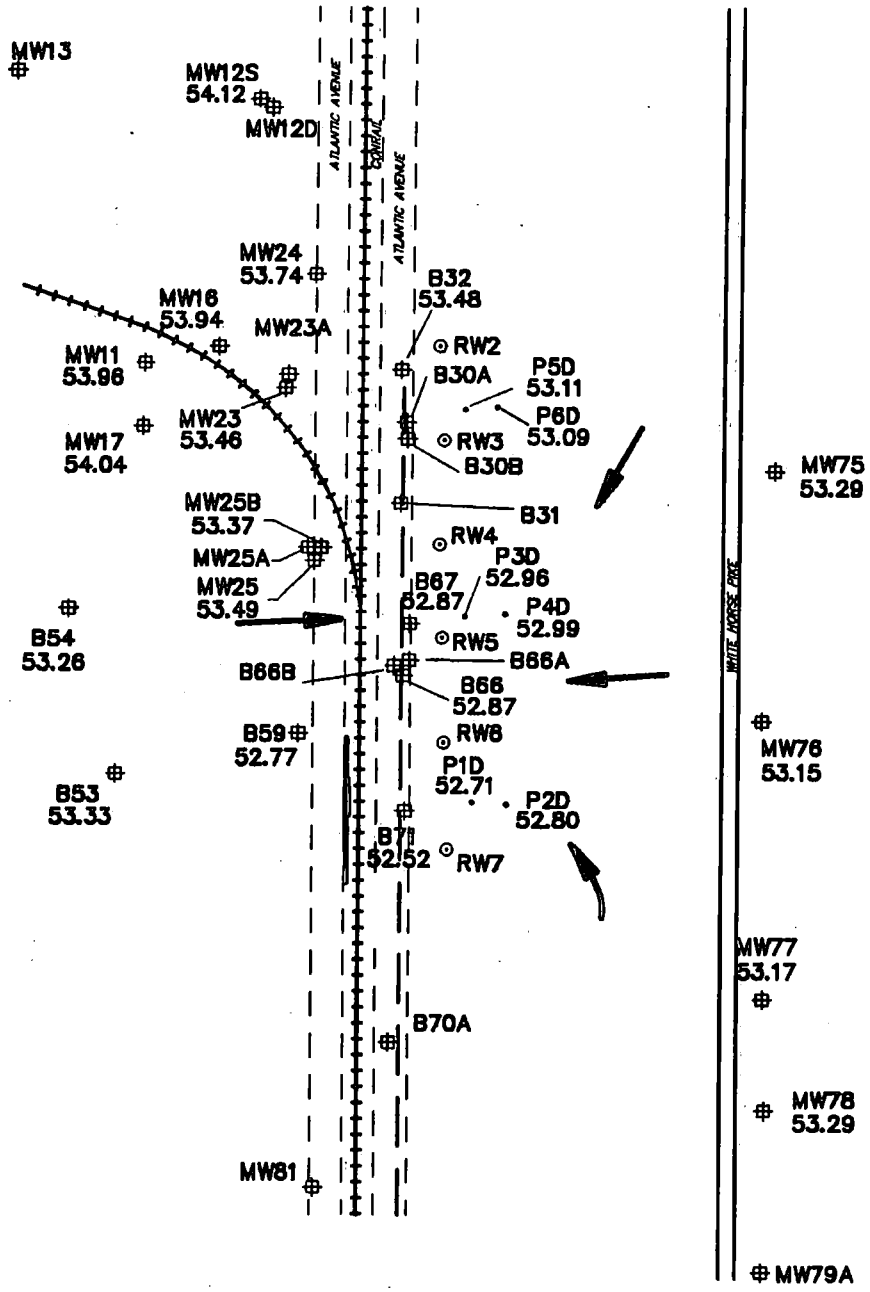
GROUNDWATER FLOW DIRECTION

Base Map Obtained From Geraghty & Miller's August 1992 Groundwater Monitoring Report.

GROUNDWATER ELEVATIONS AND GROUNDWATER FLOW AUGUST 11, 1995 – SHALLOW WELLS

LENOX CHINA
POMONA, NEW JERSEY

SK5303BQ
100595



0 300

Scale In Feet

LEGEND

PS1. LOCATION OF WELL POINT

B65 LOCATION OF MONITORING WELL

RW5 LOCATION OF RECOVERY WELL

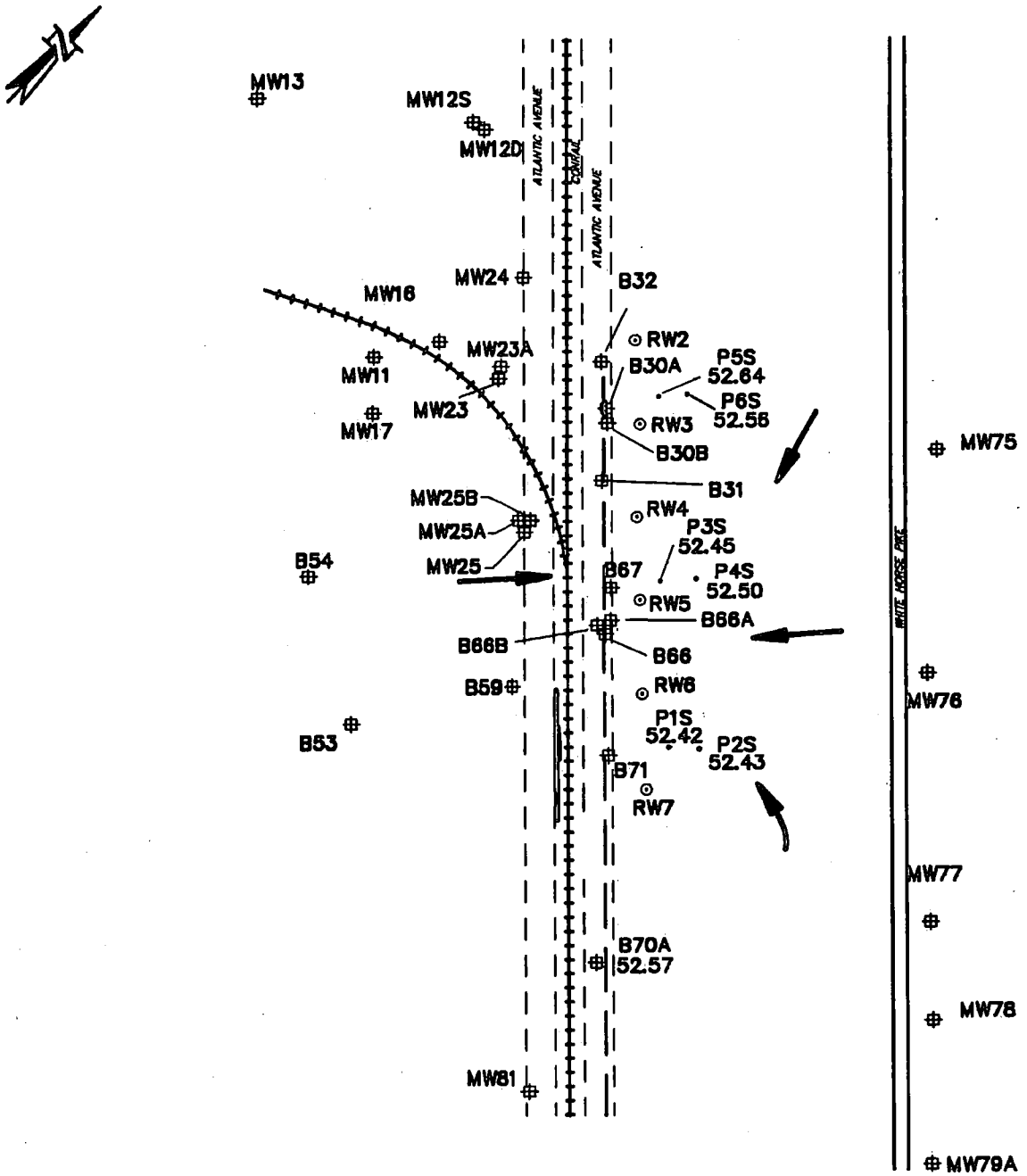
GROUNDWATER FLOW DIRECTION

Base Map Obtained From Geraghty & Miller's August 1992 Groundwater Monitoring Report.

GROUNDWATER ELEVATIONS AND GROUNDWATER FLOW AUGUST 11, 1995 – DEEP WELLS

LENOX CHINA
POMONA, NEW JERSEY

SK5303BR
100595

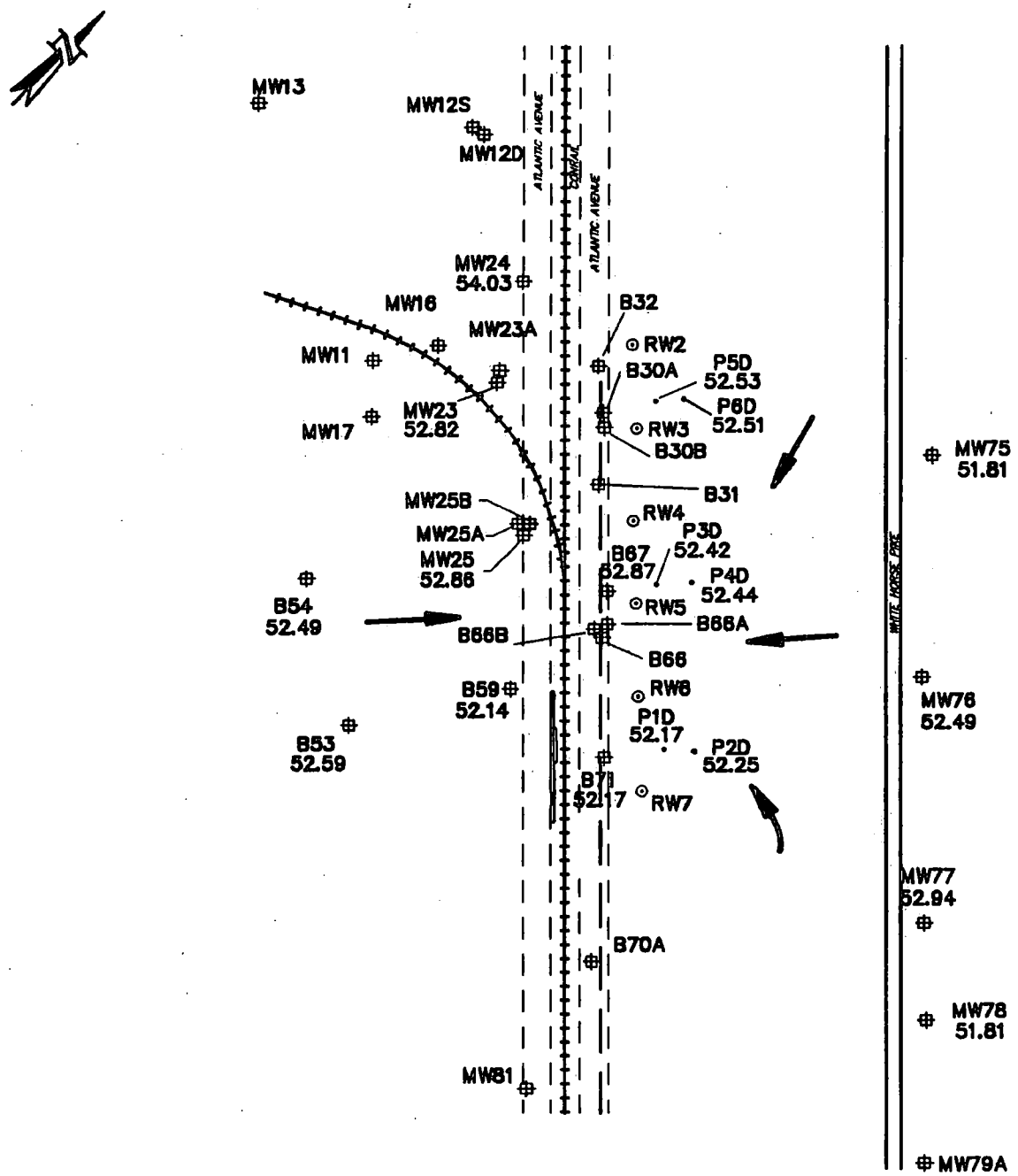


Base Map Obtained From Geraghty & Miller's August 1992 Groundwater Monitoring Report.

GROUNDWATER ELEVATIONS AND GROUNDWATER FLOW SEPTEMBER 1, 1995 – SHALLOW WELLS

LENOX CHINA
POMONA, NEW JERSEY

SK5303BS
100995



0 300

Scale In Feet

LEGEND

PS1. LOCATION OF WELL POINT

B65 LOCATION OF MONITORING WELL

RW5 LOCATION OF RECOVERY WELL

GROUNDWATER FLOW DIRECTION

Base Map Obtained From Geraghty & Miller's August 1992 Groundwater Monitoring Report.

GROUNDWATER ELEVATIONS AND GROUNDWATER FLOW SEPTEMBER 1, 1995 – DEEP WELLS

LENOX CHINA
POMONA, NEW JERSEY

SK5303BT
100995

GD1

eder associates
environmental scientists and engineers

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NJD002325074

May 14, 1996
File #530-3.3

Frank Faranca, Project Manager
New Jersey Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Federal Case Management
CN 028
401 East State Street
Trenton, New Jersey 08625-0028

Re: GWSAP/SGWSAP
Lenox China, Pomona, New Jersey

Dear Mr. Faranca:

I am enclosing three copies of the GWSAP and SGWSAP for the Lenox China site. The plans were revised to address the comments outlined in the Department's March 26, 1996 letter to Lenox China. Item 16 in NJDEP's February 1996 letter to Lenox required that Lenox provide a map showing the location of the Blue Herons Golf Course monitoring wells which are sampled as part of the statistical analysis/Classification Exception Area program. EDER has requested a site map from Blue Herons and it will be sent it to the Department under separate cover.

Please call us if you have any questions.

Very truly yours,

EDER ASSOCIATES

James M. Barish
Project Manager/Hydrogeologist

Frederick H. Inyard, P.E.
Senior Vice President
JMB/FHI/mw

cc: A. Park, USEPA
L. Fantin, Esq.
J. Kinkela
G. Berman
M. Foley

MW5325

AP

State of New Jersey

Department of Environmental Protection

Christine Todd Whitman
Governor

Robert C. Shinn, Jr.
Commissioner

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
NO. P 371 442 127

MAR 26 1996

Mr. Nicholas Nahorniak, VP Engineering
Lenox Incorporated
Lenox Technical Center
2511 Fire Road, Suite B-12
Absecon, N.J. 08201

Dear Mr. Nahorniak:

Re: **Lenox China Facility**
March 4, 1996 Response To Comments (GWSAP & SGWSAP)
Galloway Township, Atlantic County

The New Jersey Department of Environmental Protection (Department) and the U.S. Environmental Protection Agency (EPA) have reviewed the response to comments on the Ground Water Sampling and Analysis Plan (GWSAP) and the Supplemental GWSAP submitted by Eder Associates, Inc. on behalf of Lenox China Inc. dated March 4, 1996. The Department and EPA have determined that the modifications to the plans are acceptable provided that the following two (2) comments are incorporated into the final plans, which shall be submitted within thirty (30) calendar days from receipt of this correspondence:

Supplemental GWSAP

1. **Lenox Comment #12**
The NJDEP requested that Lenox add MW-10 and B-31 to the quarterly monitoring program. Lenox believes the current program sufficiently defines and tracks the plume. Lenox states that they would consider adding these two wells in exchange for removing other wells currently being sampled.

Department Response
After reviewing the monitoring well network, the Department will agree to add wells MW-10 and B-31 to the monitoring well network and remove MW-6 and MW-25.

2. **Lenox Comment #15**
Lenox does not believe that data from wells MW-17 and B-53 should be used in the statistical analysis program of defining background concentrations for lead and zinc at the site. Lenox states that the wells in question are located in areas where they believe ground water has been adversely impacted by previous wells constructed of galvanized steel that have since been removed.

Department Response
The Department will not require the inclusion of B-53 since a galvanized steel well was installed at the same location. However, a review of the past site maps do not show that galvanized steel wells were located in the vicinity of MW-17. The closest galvanized well was installed approximately 400 feet

upgradient of MW-17. The Department stands by its comment that MW-17 be added to the statistical analysis program.

Should you have any questions, please contact me at (609) 984-4071.

Sincerely,

Frank Faranca

Frank Faranca, Project Manager
Bureau of Federal Case Management

c: Andrew Park, USEPA, Region II
Daryl Clark, NJDEP/DPFSR/BGWPA

LENOX40.FFF

AP

eder associates
environmental scientists and engineers

SERVICE DEDICATED TO OUR CLIENTS AND THE ENVIRONMENT 25 YEARS

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Tampa, FL

March 4, 1996
File #530-3.3

Frank Faranca, Project Manager
New Jersey Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Federal Case Management
CN 028
401 East State Street
Trenton, New Jersey 08625-0028

Re: DEP Comments on Groundwater Sampling Work Plans
Lenox China, Pomona, New Jersey

Dear Mr. Faranca:

This letter responds to NJDEP's February 1996 letter to Mr. Nicholas Nahorniak, Lenox China, regarding the Department and USEPA's comments on the revised Groundwater Sampling and Analysis Plan (GWSAP) and Supplemental Groundwater Sampling and Analysis Plan (SGWSAP) prepared by Eder Associates (EDER). EDER's responses are in the same order as the comments in NJDEP's letter.

NJPDES-DGW GWSAP

1. through 4. The requested modifications were made.

5. Field blank samples are only analyzed for inorganics because samples for VOC analysis are collected using dedicated equipment. The work plan has been revised to clarify this issue.

6. The work plan specifies the collection of one duplicate sample for every 20 field samples collected during the sampling event. It is common practice to collect additional duplicate samples for every batch of 20 samples (for instance, one duplicate sample would be collected after the 41st sample is collected, the 61st sample is collected, as so on) and this is implied in the work plan.

7. Table II in 40 CFR 136.3 indicates that the recommended holding time for color analyzed by USEPA Method 110.2 is 48 hours.

Continued . . .

8. Lenox would rather analyze the groundwater samples for VOCs using the more cost-effective method 502.2 because the parameters of concern are well known and there is no need for the additional confirmation by mass spectrometer. Lenox has found that some laboratories are not equipped to perform the 502.2 method but will perform the 524.2 analysis for the same cost. For this reason, both laboratory methods are listed in the sampling plan.

9. Sulfate will be analyzed by using USEPA Method 375.4. The Table 3 reference was corrected.

Supplemental GWSAP

10. and 11. The first and second paragraphs of the SGWSAP were revised as requested.

12. NJDEP requested that Lenox add wells MW-10 and B-31 to the quarterly TCE monitoring program. Lenox believes that a sufficient number of wells are sampled during the monitoring program to define and track the extent of TCE downgradient of the Lenox plant. Lenox would consider adding wells MW-10 and B-31 to the monitoring program in place of other wells currently being sampled, such as MW-25 and MW-6, or B-54 and MW-13.

13. References to sampling the GAC unit influent, effluent, and mid-vessel will be moved from the SGWSAP to the GWSAP.

14. See response 13.

15. Lenox does not believe that using data from these wells in the statistical analysis is appropriate. The objective of the study is to establish the background concentrations of lead and zinc in groundwater around the Lenox plant. Lenox did not include these wells in the lead/zinc statistical CEA study because they are located in areas thought to be impacted by the previously removed wells constructed of galvanized casing.

16. and 17. The requested modifications were made.

Continued . . .

18. See response 13. Samples from the GAC unit will be analyzed for the full suite of parameters requested by NJDEP as listed in Table 2 of the GWSAP.

Lenox intends to continue to use Accutest Laboratories during the quarterly NJPDES-DGW and TCE groundwater monitoring programs. A copy of Accutest's Statement of Qualifications is now included in Appendix A of the GWSAP.

The Method 500 series will be used during both groundwater monitoring programs. With respect to NJDEP's review of a past NJPDES-DGW data package that indicated Method 624 was used, this appears to be a typographical error.

19. The requested modification was made.

Lenox will submit the final GWSAP and SGWSAP to NJDEP after the Department approves in writing the explanations and modification (Item 12) discussed above. Please call Mark Foley or me if you have any questions.

Very truly yours,

EDER ASSOCIATES

James M. Barish
Project Manager

Mark R. Foley
Project Manager

JMB:MRF/llv
cc: A. Park, USEPA
L. Fantin, Esq.
J. Kinkela
G. Berman
M. Foley

LLV5266.ltr

AP

State of New Jersey

Department of Environmental Protection

Christine Todd Whitman
Governor

Robert C. Shinn, Jr.
Commissioner

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
NO. Z 161 587 086

FEB 13 1996

Mr. Nicholas Nahorniak, VP Engineering
Lenox Incorporated
Lenox Technical Center
2511 Fire Road, Suite B-12
Absecon, N.J. 08201

Dear Mr. Nahorniak:

Re: **Lenox China Facility**
Ground Water Sampling & Analysis Plan (GWSAP)
Galloway Township, Atlantic County

The New Jersey Department of Environmental Protection (Department) and the U.S. Environmental Protection Agency (EPA) reviewed the above referenced plan prepared by Eder Associates Inc. on behalf of Lenox Incorporated dated January 2, 1995. The Department and EPA have determined that modifications to the plan are required. The following comments are submitted to Lenox for incorporation into a revised GWSAP and to be submitted within thirty (30) calendar days from receipt of this correspondence:

NJPDES-DGW GWSAP

Section 3.2, Pages 4-5 Well Purging Procedures

1. Section 3.2 (p.4) - PVC tubing can not be utilized for well evacuation, only the drinking water grade polyethylene tubing can be used to purge the wells.

2. Section 3.2 (p.5) - There appears to be a error in the last paragraph of Section 3.2 (Well Purging Procedures). Monitoring wells should be purged and sampled in order of "increasing" contamination.

Section 3.4, Page 7 Ground Water Treatment System Sample Collection

3. Water samples must be collected quarterly from both the influent and effluent sample ports of the groundwater treatment system. As required in the permit, Lenox must also report the percent removal of the contaminants. Table 2 of the GWSAP must also be changed to reflect this requirement. The Lenox groundwater treatment system consists of two granular activated carbon (GAC) units operating in series to treat groundwater. Lenox must sample at the midpoint of the treatment system to detect any breakthroughs of contaminants from the first GAC unit.

Section 3.7, Page 9 Field QA/QC Procedures

FEB 20 1996

4. In accordance with the NJDEP Field Sampling Procedures Manual, the water used to prepare all blanks must be "*demonstrated analyte free water*" and not the deionized water specified. This includes method blanks, trip blanks and equipment blanks (field blanks). The water for these blanks must be from a common source.

5. Section 3.7 (p.9) - In addition to the field blank for metals analysis, a field blank for volatiles analysis must also be collected. This procedure should be specified in the document. If dedicated sampling equipment are located in each well, this must be stated in the text.

6. Section 3.7 (p.9) - It should be noted that additional duplicate samples may be required depending on the total number of samples collected. Duplicate samples are collected at a rate of 5%.

Table 1 - Sample Preservation and Container Specifications

7. TABLE 1 - The holding time for Color is 24 hours according to USEPA Method 110.2.

Table 3 - Analytical Parameters, Detection Limits, and Laboratory Methods

8. TABLE 3 - Two methods (USEPA Methods 524.2 and 502.2) are listed for volatile analysis. It is unclear as to which method will be used for volatile analysis. USEPA Method 502.2 uses Gas Chromatography as opposed to USEPA Method 524.2 which uses Gas Chromatography/Mass Spectrometry. The significance is that if Method 502.2 is used, there would be no mass spectra to support the identifications. This is not a problem assuming that the end user already knows the analytes of concern at this site.

9. TABLE 3 - USEPA Method 376.4 is listed as the Laboratory Method for Sulfate. This is most likely a transcription error since USEPA Methods 376.1 and 376.2 (no Method 376.4) are for sulfides. The most likely method is USEPA Method 375.4. This issue should be clarified since there are four methods for sulfate analysis.

Supplemental GWSAP

Section 1.0, Page 1 Introduction

10. The first paragraph should state that the most current, Department-approved GWSAP was written to describe the field and laboratory procedures for monitoring, sampling and analyzing water from onsite monitoring wells and the groundwater treatment system. The development of the GWSAP is a requirement of Lenox's NJPDES-DGW Permit No. 0086487. The above statement is concise and describes the purpose and use of the GWSAP.

11. The second paragraph of the supplemental GWSAP states that two of the purposes of this plan are to sample influent water at the ground-water treatment system and establish a CEA for lead/zinc contamination. Lenox should be aware that influent sampling is a permit requirement and is therefore a requirement of the GWSAP, not the supplemental GWSAP. Also, the establishment of a CEA for the site must include the volatile organic contaminant TCE as well as the metal contaminants of lead and zinc.

Section 3.1, Page 3 TCE Ground Water Sampling

12. Upon review of the sampling plan, the Department proposes that monitoring wells B-31 and MW-10 be added to the list of wells to be sampled quarterly for TCE.

Section 3.2, Page 3 Ground Water Treatment Unit

13. The sampling of influent water taken from the groundwater treatment unit is a requirement of the NJPDES-DGW permit and must be incorporated in the GWSAP, not the supplemental GWSAP.

14. Section 3.2 (p.3) - Proposed sample locations should include both midfluent and effluent, in addition to the proposed influent sample port (see comment 3 above).

Section 3.4, Page 3 Lead/Zinc Statistical Analysis Program

15. In an August 31, 1993 letter to Lenox, the Department approved a 3-year statistical study for the purpose of establishing background concentrations for lead and zinc in ground water. The study began with the August 1994 sampling quarter. The Department recommends that monitoring wells MW-17 and B-53 be added to the list of wells sampled as part of the lead/zinc statistical analysis program. Both MW-17 and B-53 have been sampled for total lead and zinc since August of 1994.

16. The two offsite, upgradient wells identified in the text as wells 3-F and 6-F are not on Drawing 1-1. The location of these wells must be clarified.

Table 1 Ground Water Monitoring Program Summary

17. Table 1 must be revised to incorporate the comments outlined in this correspondence.

18. TABLE 1 - The Supplemental Groundwater Sampling and Analysis Plan states that the GAC treatment influent will be analyzed for Trichloroethene. In addition to trichloroethene, the Groundwater Sampling and Analysis Plan states that the effluent will be analyzed for 1,1-Dichloroethene, Trans-1,2-Dichloroethene, Cis-1,2-Dichloroethene and Vinyl Chloride. Optimally, all five volatile compounds should be analyzed in the influent. By comparing the influent and effluent results of all five analytes, one would get a better idea of how well the GAC Treatment system is working.

    Neither plan discusses Laboratory QA/QC. Since Accutest is the laboratory most likely to perform the analyses, and since Accutest is familiar with NJDEP requirements, there is a good chance that the data package will be complete. To assess the laboratory data quality, the Department has performed a cursory review of the data contained in the Lenox China Discharge to Ground Water Report which has been submitted separately. The following concern should be noted:

    While both plans state that 500 series methods will be used, the Discharge to Ground Water Report indicates in the Method Summary that USEPA Method 624 was used. After looking at the data, it appears that USEPA Method 524.2 was actually used. This is confusing and needs to be clarified.

Table 2 Sample Container Requirements

19. Table 2 - A plastic container must be utilized for collection of aqueous metals samples and not "glass" as indicated.

Should you have any questions, please contact me at (609) 984-4071.

Sincerely,

Frank Faranca

Frank Faranca, Project Manager
Bureau of Federal Case Management

c: Andrew Park, USEPA, Region II
Daryl Clark, NJDEP/DPFSR/BGWPA
Denise Rude, NJDEP/DPFSR/BEMQA
Carol Pillsbury, NJDEP/DPFSR/BEMQA

RPCE\BFCM\LENOX37.FFF

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To ANDY PARK	From FRANK FARANCA
Co. US EPA	Co. NJ DEP
Dept.	Phone #
Fax # 212-637-4437	Fax #

eder associates
consulting engineers

VIA FACSIMILE
AND REGULAR MAIL

AUG 2 1993

July 26, 1993
File #530-7

Mr. Frank F. Faranca, Project Manager
Bureau of Federal Case Management
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection
and Energy
CN 028
Trenton, New Jersey 08625-0028

Re: Lenox China Facility
Pomona, New Jersey

Dear Mr. Faranca:

As discussed during our July 12 meeting, Eder Associates Consulting Engineers, P.C. (Eder) has prepared the following groundwater monitoring work plan for the Lenox China facility in Pomona, New Jersey in response to the draft major modifications to the NJPDES-DGW Permit, as outlined in NJDEPE's May 11, 1993 letter to Stephen Lichtenstein of Lenox. Specifically, the draft major modification would lower the respective lead and zinc groundwater protection standards from 50 and 5000 ug/l to 10 and 30 ug/l, respectively.

The scope of work outlined in this work plan has two objectives: 1) to develop a statistically reliable monitoring data base to establish the existing background concentrations of lead and zinc in groundwater at the Lenox site; and 2) to subject the data base to the appropriate statistical analysis to establish the existing background concentrations, taking into account the areal, temporal (seasonal and short term), sampling and analytical variabilities inherent in any groundwater monitoring program.

After the existing background concentrations of lead and zinc are known with sufficient confidence, given the variety in the data base, Lenox will use this data to define a "classification exception" area for the facility and adjacent properties. As discussed at the July 12 meeting, exceedances of the proposed lead and zinc groundwater standards in the "classification exception" area would not be violations of the groundwater protection standards for lead and zinc.

Continued . . .

Groundwater Monitoring

The natural variability in the data includes the complex relationship of short-term (rainstorms) components superimposed on spatial and long-term (seasonal) variations. Additionally, the data will be influenced by uncertainty in sampling and analytical procedures.

Groundwater samples would be collected from seven monitoring wells on and adjacent to the Lenox facility. Eder would review the monitoring well construction and boring logs to determine whether these wells are appropriate to use before initiating the sampling program.

To address possible spatial variability in background groundwater quality, the initial background concentration will be determined based on data from three upgradient monitoring wells: Well MW-1 on the western property's boundary and two wells on the golf course west of the Lenox facility across Tilton Road. The downgradient wells selected to be monitored are B70, MW-75, MW-78 and MW-13.

The sampling protocols would be performed in accordance with the NJDEPE-approved Lenox China Groundwater Sampling and Analysis Plan (March 1993). Filtered and unfiltered samples would be collected from each monitoring well and analyzed for lead and zinc.

The initial existing background concentration will be established based on the results of monthly monitoring for one year with quarterly monitoring for at least two more years. Analytical variability would be addressed by collecting four replicate samples from each monitoring well every time the well is sampled.

After one year of monitoring, the analytical data would be evaluated to determine whether lead and zinc concentrations in the downgradient wells are statistically similar to those found in the upgradient wells. If the analytical data indicates an increase in concentrations of lead and zinc in the downgradient wells, it would be necessary to monitor other wells to define the exempt zone.

Continued . . .

Statistical Analysis

The proposed statistical analysis was developed in accordance with the USEPA Interim Status Standards for groundwater monitoring (40 CFR 265.90). Arithmetic mean and sample variance would be calculated for each parameter based on replicate samples data. Student's t-test would be applied to compare upgradient and downgradient data to determine whether differences between the two data sets are sufficient.

As specified in the 40 CFR 265, Appendix IV, the value of the t-statistic (t^*) calculated for background and downgradient data would then be compared to the value of t^{c*} in the t-test table at the 0.01 level of significance. The comparison would be done based on the following:

- If t^* is equal to or larger than t^{c*}, then conclude that there is probably a significant increase in the indicator parameter.
- If t^* is less than t^{c*}, then conclude that most probably has been no significant change in the indicator parameter.

It is known that groundwater quality can vary up to an order of magnitude depending on local hydrogeological conditions and well location. Although the results of the one-year monitoring period may provide the data needed for a reasonable comparison between background and downgradient wells, there is no prior assurance that this comparison will be reliable or imply confidence. For example, yearly precipitation, which is one of the major factors affecting the rate of leachate from contaminated soil, can vary from wet to dry years within 20 to 30%, causing a significant change in groundwater quality and a short duration rainfall before the sampling event may cause even more significant changes in groundwater quality data. It will be necessary to sort through all components in variability to assure that the groundwater quality data is reliable.

Continued . . .

Mr. Frank F. Faranca
New Jersey Department of Environmental
Protection and Energy
July 26, 1993

The student's t-test procedure provides a reasonable approach to the statistical interpretation of the certain kinds of data, but the results of the t-test applied to groundwater quality variables should be supported by the careful analysis of all back-up data because of the very different nature of the processes that contribute to the overall uncertainty inherent in groundwater quality analysis. Any reliable decision on whether site contamination influences downgradient groundwater quality can only be based on the consistent t-test results over at least a 6 to 12 month period of monitoring along with careful consideration of all relevant information on the field and sampling conditions.

The results of the monitoring program would be summarized in a report to NJDEPE which would describe the sample collection and statistical procedures used. Based on the monitoring data, the statistically-determined background lead and zinc concentrations would be used to define the "classification exception" area as described above.

We would be pleased to discuss this work plan with you at your earliest convenience.

Please call if you have any questions.

Very truly yours,

EDER ASSOCIATES CONSULTING ENGINEERS, P.C.

Nicholas A. Andrianas, P.E.
Senior Environmental Engineer
NAA/mw

cc: S. Lichtenstein, Esq.
I. Kropp
T. Wagner
D. Clark
M. Romanell
K. Swigon
J. Kinkela
G. Berman
A. Gustray

TG3108

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June 7, 1996
File # 530-3.1

Mr. Frank F. Faranca, Case Manager
New Jersey Division of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Federal Case Management
CN-028
401 East State Street
Trenton, New Jersey 08625-0028

NJD002325074

Re: DGW and TCE Monitoring Program
Lenox China, Inc., Pomona, New Jersey

Dear Mr. Faranca:

I have enclosed for your review three copies of the DGW and TCE Quarterly Groundwater Monitoring Report for the February 1996 monitoring round performed at the Lenox China plant, Pomona, New Jersey . One copy of the laboratory data is included as Appendix C.

Please call me if you have any questions.

Very truly yours,

EDER ASSOCIATES

Charles Kirman
Hydrogeologist

cc: L. Fantin, Esq (Three copies w/o Appendix C)
J. Kinkela (One copy with Appendix C)
G. Berman (One copy w/o Appendix C)
A. Park, USEPA (One copy w/o Appendix C)
J. Barish (One copy w/o Appendix C)

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February 21, 1996
File # 530-3.1

Mr. Frank F. Faranca, Case Manager
New Jersey Division of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Federal Case Management
CN-028
401 East State Street
Trenton, New Jersey 08625-0028

Re: TCE Monitoring Program
Lenox China, Inc., Pomona, New Jersey

Dear Mr. Faranca:

I have enclosed for your review three copies of the TCE Quarterly and Semi-Annual Groundwater Monitoring Report for the November 1995 monitoring round performed at the Lenox China plant, Pomona, New Jersey . One copy of the laboratory data is included as Appendix C.

Please call me if you have any questions.

Very truly yours,

EDER ASSOCIATES

Charles Kirman
Hydrogeologist

cc: L. Fantin, Esq (Three copies w/o Appendix C)
J. Kinkela (One copy with Appendix C)
G. Berman (One copy w/o Appendix C)
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J. Barish (One copy w/o Appendix C)

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November 15, 1995
File # 530-3.1

Mr. Frank F. Faranca, Case Manager
New Jersey Division of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Federal Case Management
CN-028
401 East State Street
Trenton, New Jersey 08625-0028

Re: TCE Monitoring Program
Lenox China, Inc., Pomona, New Jersey

Dear Mr. Faranca:

I have enclosed for your review three copies of the TCE Quarterly Groundwater Monitoring Report for the August 1995 monitoring round performed at the Lenox China plant, Pomona, New Jersey . One copy of the laboratory data is included as Appendix C.

Please call me if you have any questions.

Very truly yours,

EDER ASSOCIATES

Charles Kirman
Hydrogeologist

cc: L. Fantin, Esq (Three copies w/o Appendix C)
J. Kinkela (One copy with Appendix C)
G. Berman (One copy w/o Appendix C)
A. Park, USEPA (One copy w/o Appendix C)
J. Barish (One copy w/o Appendix C)

NOV 27 1995

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July 31, 1995
File # 530-3.1

Mr. Frank F. Faranca, Case Manager
New Jersey Division of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Federal Case Management
CN-028
401 East State Street
Trenton, New Jersey 08625-0028

Re: TCE Monitoring Program
Lenox China, Inc., Pomona, New Jersey

Dear Mr. Faranca:

I have enclosed for your review three copies of the TCE Quarterly and Semi-Annual Groundwater Monitoring Report for the May 1995 monitoring round performed at the Lenox China plant, Pomona, New Jersey . One copy of the laboratory data is included as Appendix C.

Please call me if you have any questions.

Very truly yours,

EDER ASSOCIATES

Charles Kirman
Hydrogeologist

cc: L. Fantin, Esq (Three copies w/o Appendix C)
J. Kinkela (One copy with Appendix C)
G. Berman (One copy w/o Appendix C)
A. Park, USEPA (One copy w/o Appendix C)
J. Barish (One copy w/o Appendix C)

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State of New Jersey

Department of Environmental Protection

Christine Todd Whitman
Governor

Robert C. Shinn, Jr.
Commissioner

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
NO._____

MAY 24 1995

Mr. Louis A. Fantin, Esq., Vice President
Lenox Incorporated
100 Lenox Drive
Lawrenceville, N.J. 08648-2394

Dear Mr. Fantin:

Re: **Lenox China Facility**
TCE Quarterly Ground Water Report (February 1995)
Galloway Township, Atlantic County

The New Jersey Department of Environmental Protection (Department), the U.S. Environmental Protection Agency (EPA) have reviewed the above referenced report prepared by Eder Associates on behalf of Lenox Incorporated (Lenox) received April 24, 1995. The Department and EPA have concluded that the Report is approved; however, the regulatory agencies have the following comments and recommendations regarding monitor well sampling requirements:

1. Between October and December of 1994, twenty-four (24) well points were removed from service due to concern about the galvanized steel casing used to construct the well points. Of the 24 well points, 8 were replaced with PVC casing. Well point B-55, which was sampled quarterly and B-56, which was sampled annually, were **not** replaced. Due to the changes in the number of wells now monitoring the TCE plumes, the Department recommends a change in the sampling schedule for wells B-54 and B-59.

   Well B-54, which is currently monitored for water-level data only, should now be sampled annually for TCE in addition to water-level measurements. Well B-59, currently sampled annually for TCE, must now be sampled on a quarterly basis for this contaminant.

Should you have any questions, please contact me at (609) 633-1455.

Sincerely,

Frank Faranca

Frank Faranca, Project Manager
Bureau of Federal Case Management

c: Andrew Park, USEPA, Region II
Daryl Clark, NJDEPE/DPFSR/BGWPA

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April 27, 1995
File # 530-3.1

MAY 0 3 1995

Mr. Frank F. Faranca, Case Manager
New Jersey Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Federal Case Management
CN-028
401 East State Street
Trenton, New Jersey 08625-0028

Re: TCE Monitoring Program
Lenox China, Inc., Pomona, New Jersey

Dear Mr. Faranca:

Enclosed is a revised Contour Map Reporting Form for the February 1995 Quarterly Groundwater Monitoring Report submitted to the Department on April 24, 1995. The second page of the original form (Appendix B) was not included in the report.

Please call me if you have any questions.

Very truly yours,

EDER ASSOCIATES

Charles Kirman
Hydrogeologist

cc: L. Fantin, Esq.
J. Kinkela
G. Berman
A. Park, USEPA
J. Barish

Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

1. Did any surveyed well casing elevations change from the previous sampling event? Yes ☒ No ☐
   If yes, attach new "Well Certification -Form B" and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.)

   Galvanized steel wells replaced with PVC wells

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes ☒ No ☐
   If yes, identify these wells.

   P-1A, P-1B, P-2A, P-8A, P-9A, P-9B, MW-1, MW-3, MW-4, MW-6, MW-7
   MW-8, MW-9, MW-10, MW-11, MW-12D, MW-12S, MW-13, MW-14D, MW-14S,
   MW-16, MW-17, MW-23, MW-23A, MW-24, MW-25, MW-25A, MW-25B, MW-26A
   MW-26B, MW-75, MW-76, MW-77, MW-78, MW-79A, MW-80, B-31, B-32, B-53
   B-54, B-59, B-66, B-66A, B-66B, B-67, B-70A, B-71

3. Are there any monitor wells present at the site but omitted from the contour map? Yes ☒ No ☐
   Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes ☐ No ☒
   Were any of the monitor wells with separate phase product included in the ground water contour map? Yes ☐ No ☐
   If yes, show the formula used to correct the water table elevation.

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April 24, 1995
File # 530-3.1

Mr. Frank F. Faranca, Case Manager
New Jersey Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Federal Case Management
CN-028
401 East State Street
Trenton, New Jersey 08625-0028

APR 27 REC'D

Re: TCE Monitoring Program
Lenox China, Inc., Pomona, New Jersey

Dear Mr. Faranca:

I have enclosed for your review three copies of the Quarterly Groundwater Monitoring Report for the February 1995 monitoring round performed at the Lenox China plant. One copy of the laboratory data is included as Appendix C.

Please call me if you have any questions.

Very truly yours,

EDER ASSOCIATES

Charles Kirman
Hydrogeologist

cc: L. Fantin, Esq. (Three copies w/o Appendix B)
J. Kinkela (One copy with Appendix B)
G. Berman (One copy w/o Appendix B)
A. Park, USEPA (One copy w/o Appendix B)
J. Barish (One copy w/o Appendix B)

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February 2, 1995
File # 530-3.1

Mr. Frank F. Faranca, Case Manager
New Jersey Division of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Federal Case Management
CN-028
401 East State Street
Trenton, New Jersey 08625-0028

Re: TCE Monitoring Program
Lenox China, Inc., Pomona, New Jersey

Dear Mr. Faranca:

I have enclosed for your review three copies of the Quarterly and Semi-Annual Groundwater Monitoring Report for the November 1994 monitoring round performed at the Lenox China plant. One copy of the laboratory data is included as Appendix B.

Please call me if you have any questions.

Very truly yours,

EDER ASSOCIATES

Charles Kirman
Hydrogeologist

cc: L. Fantin, Esq (Three copies w/o Appendix B)
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G. Berman (One copy w/o Appendix B)
A. Park, USEPA (One copy w/o Appendix B)
J. Barish (One copy w/o Appendix B)

AP 601

State of New Jersey

Department of Environmental Protection

Christine Todd Whitman
Governor

Robert C. Shinn, Jr.
Commissioner

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
NO. Z161587 089

FEB 14 1996

Mr. Nicholas Nahorniak, VP Engineering
Lenox Incorporated
Lenox Technical Center
2511 Fire Road, Suite B-12
Absecon, N.J. 08201

NJD 002 325074

Dear Mr. Nahorniak:

Re: **Lenox China Facility**
Quality Assurance Data Validation - Discharge to Ground Water Report
Galloway Township, Atlantic County

The New Jersey Department of Environmental Protection (Department) has reviewed the Discharge to Ground Water Report submitted by Eder Associates, Inc. on behalf of Lenox China Inc. dated January 18, 1996. Thirty one (31) water samples, one (1) trip blank and four (4) field blanks were analyzed for Volatiles by USEPA Method 524.2, Inorganics by USEPA Method 200.7 and General Chemistry by USEPA Conventional Methods by Acutest, Dayton, NJ. The following is the result of the Department's validation of that data:

Field ID	Laboratory ID	Sample Date	Analyses
PO-MW-1	E7741-1	11/08/1996	VOA, Inorg, GC
PO-MW-1 diss	E7741-2	11/08/1996	Inorg
PO-MW-3	E7741-3	11/08/1996	VOA, Inorg, GC
PO-MW-3 diss	E7741-4	11/08/1996	Inorg
PO-MW-10	E7741-5	11/08/1996	VOA, Inorg, GC
PO-MW-10 diss	E7741-6	11/08/1996	Inorg
PO-MW-6	E7741-7	11/08/1996	VOA, Inorg, GC
PO-MW-6 diss	E7741-8	11/08/1996	Inorg
PO-MW-4	E7741-9	11/08/1996	Inorg, GC
PO-MW-4 diss	E7741-10	11/08/1996	Inorg
PO-MW-2	E7741-11	11/08/1996	VOA, Inorg, GC
PO-MW-2 diss	E7741-12	11/08/1996	Inorg
PO-MW-8	E7741-13	11/08/1996	Inorg, GC
PO-MW-8 diss	E7741-14	11/08/1996	Inorg
PO-MW-7	E7741-15	11/08/1996	Inorg, GC
PO-MW-7 diss	E7741-16	11/08/1996	Inorg
PO-MW-9	E7741-17	11/08/1996	VOA, Inorg, GC
PO-MW-9 diss	E7741-18	11/08/1996	Inorg
PO-MW-15	E7741-19	11/08/1996	VOA, Inorg, GC
PO-MW-15 diss	E7741-20	11/08/1996	Inorg
PO-FB-2	E7741-21	11/08/1996	Inorg, GC

FEB 20 1996

PO-FB-2 diss	E7741-22	11/08/1996	Inorg
PO-TB-1	E7741-23	11/08/1996	VOA
PO-GW-MW-17	E7809-1	11/09/1996	Inorg
PO-GW-MW-17 diss	E7809-2	11/09/1996	Inorg
PO-GW-MW-16	E7809-3	11/09/1996	Inorg
PO-GW-MW-16 diss	E7809-4	11/09/1996	Inorg
TRP-1	E7703-1	11/07/1996	Inorg, GC
TRP-FB	E7703-2	11/07/1996	Inorg, GC
PO-GW-MW-72	E7704-1	11/07/1996	Inorg
PO-GW-MW-72 diss	E7704-2	11/07/1996	Inorg
PO-GW-MW-73	E7704-3	11/07/1996	Inorg
PO-GW-MW-73 diss	E7704-3	11/07/1996	Inorg
PO-GW-MW-74	E7704-5	11/07/1996	Inorg
PO-GW-MW-74 diss	E7704-6	11/07/1996	Inorg
PO-FB1	E7704-7	11/07/1996	Inorg
PO-FB1 diss	E7704-8	11/07/1996	Inorg

The Department has reviewed the above listed aqueous samples according to Reduced Regulatory Deliverable Requirements as specified in the Technical Requirements for Site Remediation, N.J.A.C. 7:26, E. et. seq. A review of a reduced deliverable package does not entail a full data validation and as such, does not provide a target and non-target analyte summary.

Volatile Fraction

The volatile data are acceptable.

Inorganic Fraction

The inorganic data are acceptable.

General Chemistry Fraction

The general chemistry data are acceptable.

Should you have any questions, please contact me at (609) 984-4071.

Sincerely,

Frank Faranca

Frank Faranca, Project Manager
Bureau of Federal Case Management

c: Andrew Park, USEPA, Region II
Daryl Clark, NJDEP/DPFSR/BGWPA
Carol Pillsbury, NJDEP/DPFSR/BEMQA

LENOX39.FFF